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Applied Science &  
Technology Index  
1966



**WITHDRAWN**

## Abbreviations of Periodicals Indexed

For full information consult pages vii to x

- AIAA J—AIAA Journal  
AICHe J—Journal of the American Institute of Chemical Engineers  
ASHRAE J—ASHRAE Journal  
ASME Trans—Transactions of the American Society of Mechanical Engineers  
Air Cond Heat & Ven—Air Conditioning, Heating and Ventilating  
Aircraft Eng—Aircraft Engineering  
Am Assn Pet Geologists Bul—Bulletin of the American Association of Petroleum Geologists  
Am Cer Soc Bul—Bulletin of the American Ceramic Society  
Am Cer Soc J—Journal of the American Ceramic Society  
Am Chem Soc J—Journal of the American Chemical Society  
Am Concrete Inst J—Journal of the American Concrete Institute  
Am Dyestuff Rep—American Dyestuff Reporter  
Am Gas Assn Mo—American Gas Association Monthly  
Am Inst Chem Eng J. See AICHe J  
Am J Clinical Nutrition—American Journal of Clinical Nutrition  
Am J Phys—American Journal of Physics  
Am J Pub Health—American Journal of Public Health and the Nation's Health  
Am Mach—American Machinist  
Am Mineralogist—American Mineralogist, Journal of the Mineralogical Society of America  
Am Oil Chem Soc J—Journal of the American Oil Chemists' Society  
Am Paper Ind—American Paper Industry  
Am Perfumer—American Perfumer and Cosmetics  
Am Scientist—American Scientist  
Am Soc C E Proc—Proceedings of the American Society of Civil Engineers  
Am Soc Heat Refrig & Air-Cond Eng J. See ASHRAE J  
Am Soc Mech Eng Trans. See ASME Trans  
Am Water Works Assn J—Journal American Water Works Association  
Anal Chem—Analytical Chemistry  
Arch Forum—Architectural Forum  
Arch Rec—Architectural Record  
Archives Environmental Health—Archives of Environmental Health  
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Automobile Eng—Automobile Engineer  
Automotive Ind—Automotive Industries  
Bell Lab Rec—Bell Laboratories Record  
Bell System Tech J—Bell System Technical Journal  
Brit Plastics—British Plastics  
Can Chem Process—Canadian Chemical Processing  
Can J Chem Eng—Canadian Journal of Chemical Engineering  
Can Min & Met Bul—Canadian Mining and Metallurgical Bulletin  
Cer Ind—Ceramic Industry  
Chem & Eng N—Chemical and Engineering News  
Chem & Ind—Chemistry and Industry  
Chem Eng—Chemical Engineering  
Chem Eng Prog—Chemical Engineering Progress  
Civil Eng—Civil Engineering—ASCE  
Coal Age—Coal Age  
Combustion—Combustion  
Comp Air Mag—Compressed Air Magazine  
Control Eng—Control Engineering  
Corrosion—Corrosion  
Diesel Equip Supt—Diesel Equipment Superintendent  
Dom Eng—Domestic Engineering  
Drug & Cosmetic Ind—Drug and Cosmetic Industry  
Econ Geol—Economic Geology and the Bulletin of the Society of Economic Geologists  
Elec Com—Electrical Communication  
Elec Constr & Maint—Electrical Construction and Maintenance  
Elec World—Electrical World  
Electro-Tech—Electro-Technology  
Electrochem Soc J—Journal of the Electrochemical Society  
Electronic Eng—Electronic Engineering  
Electronic Engineer—Electronic Engineer  
Electronic Ind—Electronic Industries  
Electronics—Electronics  
Eng & Instrumentation. See J Res Nat Bur Stand  
Eng & Min J—Engineering and Mining Journal  
Eng J—Engineering Journal  
Eng N—Engineering News-Record  
Engineer—Engineer  
Engineering—Engineering  
Food Eng—Food Engineering  
Food Tech—Food Technology  
Foundry—Foundry  
Franklin Inst J—Journal of the Franklin Institute  
Fundamentals. See Ind & Eng Chem  
Gas—Gas  
Gas Age—Gas Age  
Geol Soc Bul—Bulletin of the Geological Society of America  
Geophysics—Geophysics  
Glass Ind—Glass Industry  
Heating-Piping—Heating, Piping and Air Conditioning  
Hydraulics & Pneumatics—Hydraulics & Pneumatics  
Hydrocarbon Process—Hydrocarbon Processing  
IEEE Proc—Proceedings of the IEEE  
IEEE Trans Applications & Ind—IEEE Transactions on Applications and Industry  
IEEE Trans Com & Electronics—IEEE Transactions on Communication and Electronics  
IEEE Trans Com Tech—IEEE Transactions on Communication Technology  
IEEE Trans Ind & Gen Applications—IEEE Transactions on Industry and General Applications  
IEEE Trans Power Apparatus & Systems—IEEE Transactions on Power Apparatus and Systems  
ISA J—ISA Journal  
Illum Eng—Illuminating Engineering, The Journal of the Illuminating Engineering Society



## ABBREVIATIONS OF PERIODICALS INDEXED

Ind & Eng Chem—Industrial and Engineering Chemistry  
 Ind Electronics—Industrial Electronics  
 Ind Finishing—Industrial Finishing  
 Ind Med—Industrial Medicine and Surgery  
 Ind Phot—Industrial Photography  
 Ind Quality Control—Industrial Quality Control  
 Inland Ptr/Am Lithogr—Inland Printer/American Lithographer  
 Inst E E Proc—Proceedings of the Institution of Electrical Engineers  
 Inst Mech Eng Proc—Proceedings of the Institution of Mechanical Engineers  
 Inst Metals J—Journal of the Institute of Metals  
 Inst Pet J—Journal of the Institute of Petroleum  
 Instrument Soc Am J. See ISA J  
 Instruments & Control Systems—Instruments and Control Systems  
 Iron Age—Iron Age  
 Iron & Steel Eng—Iron and Steel Engineer  
 Iron & Steel Inst J—Journal of the Iron and Steel Institute

J Agri & Food Chem—Journal of Agricultural and Food Chemistry  
 J Ap Chem—Journal of Applied Chemistry  
 J Ap Mech. See ASME Trans  
 J Ap Phys—Journal of Applied Physics  
 J Basic Eng. See ASME Trans  
 J Colloid & Interface Sci—Journal of Colloid and Interface Science  
 J Colloid Sci—Journal of Colloid Science  
 J Eng Ind. See ASME Trans  
 J Eng Power. See ASME Trans  
 J Geol—Journal of Geology  
 J Heat Transfer. See ASME Trans  
 J Math & Phys—Journal of Mathematics and Physics  
 J Metals—Journal of Metals  
 J Nutrition—Journal of Nutrition  
 J Pet Tech—Journal of Petroleum Technology  
 J Res Nat Bur Stand—Journal of Research of the National Bureau of Standards  
 J Sci Instr—Journal of Scientific Instruments

Light Metal Age—Light Metal Age  
 Lub Eng—Lubrication Engineering

Mach—Machinery  
 Machine Design—Machine Design  
 Mag of Stand—Magazine of Standards  
 Manuf Chem—Manufacturing Chemist and Aerosol News  
 Marine Eng/Log—Marine Engineering/Log  
 Materials In Design Eng—Materials in Design Engineering  
 Materials Res & Stand—Materials Research and Standards  
 Math & Math Phys. See J Res Nat Bur Stand  
 Mech Eng—Mechanical Engineering  
 Metal Finishing—Metal Finishing  
 Metal Prog—Metal Progress  
 Metallurgia—Metallurgia, the International Journal of Metals & Materials  
 Mill & Factory—Mill & Factory  
 Min Cong J—Mining Congress Journal  
 Min Eng—Mining Engineering  
 Mod Materials Handling—Modern Materials Handling  
 Mod Metals—Modern Metals  
 Mod Phot—Modern Photography  
 Mod Plastics—Modern Plastics  
 Mod Textiles Mag—Modern Textiles Magazine

Naval Eng J—Naval Engineers Journal  
 Nucleonics—Nucleonics

Oil & Gas J—Oil and Gas Journal  
 Op Res—Operations Research

Paper Ind—Paper Industry  
 Pet Management—Petroleum Management  
 Phys & Chem. See J Res Nat Bur Stand  
 Phys Today—Physics Today  
 Pit & Quarry—Pit and Quarry  
 Plant Eng—Plant Engineering  
 Plastics Tech—Plastics Technology  
 Plastics World—Plastics World  
 Plating—Plating  
 Power—Power  
 Power Eng—Power Engineering  
 Proc Design. See Ind & Eng Chem  
 Product Eng—Product Engineering  
 Product Res & Develop. See Ind & Eng Chem  
 Prog Arch—Progressive Architecture  
 Pub Roads—Public Roads  
 Pub Works—Public Works

### Q S T—QST

RCA R—RCA Review  
 R Sci Instr—Review of Scientific Instruments  
 Radio & Electronic Eng—Radio and Electronic Engineer  
 Radio Corp Am R. See RCA R  
 Radio-Electronics—Radio-Electronics  
 Radio Sci—Radio Science  
 Res/Develop—Research/Development  
 Roads & Sts—Roads and Streets  
 Rock Prod—Rock Products  
 Roy Aeronautical Soc J—Journal of the Royal Aeronautical Society  
 Rubber Age—Rubber Age  
 Rubber Chem & Tech—Rubber Chemistry and Technology  
 Rubber World—Rubber World

SAE J—SAE Journal  
 SMPTE J—Journal of the Society of Motion Picture and Television Engineers  
 Safety Maint—Safety Maintenance  
 Sci Am—Scientific American  
 Soap & Chem Spec—Soap and Chemical Specialties  
 Soc Automotive Eng J. See SAE J  
 Soc Dyers & Col J—Journal of the Society of Dyers and Colourists  
 Soc Motion Picture & Tv Eng J. See SMPTE J  
 Space/Aeronautics—Space/Aeronautics  
 Steel—Steel

Tappi—Tappl  
 Tech Assn Pulp & Paper Ind. See Tappl  
 Textile Ind—Textile Industries  
 Textile Res J—Textile Research Journal  
 Textile World—Textile World  
 Tool & Manuf Eng—Tool and Manufacturing Engineer  
 Traffic Q—Traffic Quarterly

WPCF J—Journal of the Water Pollution Control Federation  
 Water & Sewage Works—Water & Sewage Works  
 Water & Wastes Eng—Water and Wastes Engineering  
 Water Works & Wastes Eng—Water Works and Wastes Engineering  
 Welding Eng—Welding Engineer  
 Welding J—Welding Journal  
 Westinghouse Eng—Westinghouse Engineer  
 Wire & Wire Prod—Wire and Wire Products  
 Wireless World—Wireless World

WITHDRAWN

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# Applied Science & Technology Index

1966

EDITED BY  
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INDEXER  
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MANAGING EDITOR  
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E. T.



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**Plastics World**—Plastics World  
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**Product Eng**—Product Engineering  
**Product Res & Develop**. See Ind & Eng Chem  
**Prog Arch**—Progressive Architecture  
**Pub Roads**—Public Roads  
**Pub Works**—Public Works

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**Radio Corp Am R**. See RCA R  
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**Radio Sci**—Radio Science  
**Res/Develop**—Research/Development  
**Roads & Sts**—Roads and Streets  
**Rock Prod**—Rock Products  
**Roy Aeronautical Soc J**—Journal of the Royal Aeronautical Society  
**Rubber Age**—Rubber Age  
**Rubber Chem & Tech**—Rubber Chemistry and Technology  
**Rubber World**—Rubber World

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**Soc Dyers & Col J**—Journal of the Society of Dyers and Colourists  
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**Steel**—Steel

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**Textile Res J**—Textile Research Journal  
**Textile World**—Textile World  
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**Traffic Q**—Traffic Quarterly

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**Water & Sewage Works**—Water & Sewage Works  
**Water & Wastes Eng**—Water and Wastes Engineering  
**Water Works & Wastes Eng**—Water Works and Wastes Engineering  
**Welding Eng**—Welding Engineer  
**Welding J**—Welding Journal  
**Westinghouse Eng**—Westinghouse Engineer  
**Wire & Wire Prod**—Wire and Wire Products  
**Wireless World**—Wireless World





# List of Periodicals Indexed

- AIAA Journal.** m American Institute of Aeronautics and Astronautics, Inc. 1290 Avenue of the Americas, New York 10019  
Price on request
- AIChE Journal.** \$25 bi-m American Institute of Chemical Engineers, 345 E 47th St, New York 10017
- ASHRAE Journal.** \$10 m American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. 345 E 47th St, New York 10017
- ASME Transactions.** \$15 American Society of Mechanical Engineers. 345 E 47th St, New York 10017  
Published in 5 parts: ser A, Journal of Engineering for Power, q (Ja); ser B, Journal of Engineering for Industry, q (F); ser C, Journal of Heat Transfer, q (F); ser D, Journal of Basic Engineering, q (Mr); ser E, Journal of Applied Mechanics, q (Mr)  
\$7.50 to members and affiliates
- Air Conditioning, Heating and Ventilating.** \$7 m Industrial Press, Inc. 200 Madison Av, New York 10016
- Aircraft Engineering.** 60s; U.S. \$9; Canada \$9 m Bunhill Publications, Ltd. 4 Ludgate Circus, London, E.C. 4
- American Association of Petroleum Geologists Bulletin.** \$30 m American Association of Petroleum Geologists, Inc. Box 979, Tulsa Okla. 74101
- American Ceramic Society Bulletin.** \$6 m American Ceramic Society, 4055 N High St, Columbus, Ohio 43214
- American Ceramic Society Journal; Ceramic Abstracts.** \$25 including Ceramic Bulletin m American Ceramic Society, 4055 N High St, Columbus, Ohio 43214
- American Chemical Society Journal.** \$32 bi-w American Chemical Society, 1155 16th St, N.W., Washington, D.C. 20036
- American Concrete Institute Journal.** \$18 m American Concrete Institute, P.O. Box 4754 Redford Station, Detroit, Mich. 48219
- American Dyestuff Reporter.** \$7.50 bi-w Howes Pub. Co. Inc. 44 E 23d St, New York 10010
- American Gas Association Monthly.** \$5 m (bi-m JI-Ag) American Gas Assn, Inc. 605 Third Av, New York 10016
- American Institute of Chemical Engineers Journal.** See A I Ch E Journal
- American Journal of Clinical Nutrition.** \$15 m The American Journal of Clinical Nutrition, Inc. 466 Lexington Av, New York 10017
- American Journal of Physics.** \$12.50 m American Institute of Physics, Inc. 335 E 45th St, New York 10017
- American Journal of Public Health and the Nation's Health.** \$15 m American Public Health Association, Inc. 1790 Broadway, New York 10019
- American Machinist.** \$20 bi-w McGraw-Hill, Inc. 330 W 42d St, New York 10036
- American Mineralogist, Journal of the Mineralogical Society of America.** \$15 bi-m U.S. Geological Survey, Washington, D.C. 20242
- American Oil Chemists' Society Journal.** \$12 m American Oil Chemists' Society, 35 E Wacker Drive, Chicago 60601
- American Paper Industry.** single numbers \$1.25 m Paper Industry Management Assn, 2570 Devon Av, Des Plaines, Ill. 60018  
Formerly Paper Industry; changed January, 1966
- American Perfumer and Cosmetics.** \$7.50 m Allured Pub. Corp. 1031 South Blvd, Oak Park, Ill. 60302  
October is Documentary Edition. \$3
- American Scientist.** \$3.50 q Society of the Sigma Xi, 155 Whitney Av, New Haven, Conn. 06510
- American Society of Civil Engineers Proceedings.** m American Society of Civil Engineers, 345 E 47th St, New York 10017  
Proceedings of each division published separately. AT. CO. IR. UP. HW. PL. PO. PP. SU \$4; EM. HY. SA. SM. ST \$3; WW \$6
- American Society of Heating, Refrigerating and Air-Conditioning Engineers Journal.** See ASHRAE Journal
- American Society of Mechanical Engineers Transactions.** See ASME Transactions
- American Water Works Association Journal.** m American Water Works Assn. Inc. 2 Park Av, New York 10016
- Analytical Chemistry.** \$5 m American Chemical Society, 1155 16th St, N.W. Washington, D.C. 20036
- Architectural Forum.** \$12 10 times a year Architectural Forum, 111 W 57th St, New York 10019
- Architectural Record.** \$6 m McGraw-Hill Publications, 330 W 42d St, New York 10036  
Extra number published in Mid-May
- Archives of Environmental Health.** \$12 m American Medical Association, 535 N Dearborn St, Chicago 60610
- Association for Computing Machinery Journal.** \$15 q Association for Computing Machinery, 211 E 43d St, New York 10017
- Astronautics & Aeronautics.** m American Institute of Aeronautics and Astronautics, 1290 Avenue of the Americas, New York 10019  
Price on request
- Audio.** \$5 m North American Pub. Co. 134 N 13th St, Philadelphia, Pa. 19107
- Audio Engineering Society Journal.** \$11 q Audio Engineering Society, 60 E 42d St, New York 10017
- Automation.** \$10 m Penton Pub. Co. Penton Bldg, Cleveland 44113
- Automobile Engineer.** £4 5s; U.S. \$12; Canada \$12 m Iliffe Transport Publications, Ltd. Dorset House, Stamford St, London, S.E. 1  
Extra number published in May
- Automotive Industries.** \$10 s-m Chilton Co. Chestnut & 56th Sts, Philadelphia 19139
- Bell Laboratories Record.** \$2 m Bell Telephone Laboratories, Inc. Mountain Av, Murray Hill, N.J. 07971
- Bell System Technical Journal.** \$5 10 times a yr American Telephone and Telegraph Co. 195 Broadway, New York 10007
- British Plastics.** £3 10s; U.S. \$11.50 Canada \$11.50 m Iliffe Industrial Publications, Ltd. Dorset House, Stamford St, London, S.E. 1
- Canadian Chemical Processing.** \$6; U.S. \$10 m Southam Business Publications, Ltd. 1450 Don Mills Rd, Don Mills, Ontario, Canada
- Canadian Journal of Chemical Engineering.** \$7.50; U.S. \$10 bi-m Chemical Institute of Canada, 151 Slater St, Ottawa 4, Ont.
- Canadian Mining and Metallurgical Bulletin.** \$10; U.S. \$12 m Canadian Institute of Mining and Metallurgy, 906 Drummond Bldg, Montreal, Que.
- Ceramic Industry.** \$5 m Cahnners Pub. Co. Inc. 5 So Wabash Av, Chicago 60603
- Chemical & Engineering News.** \$6 w American Chemical Society, 1155 16th St, N.W. Washington, D.C. 20036
- Chemical Engineering.** \$3 bi-w McGraw-Hill Inc. 330 W 42d St, New York 10036
- Chemical Engineering Progress.** \$25 m American Institute of Chemical Engineers, 345 E 47th St, New York 10017
- Chemistry and Industry.** £7 w Society of Chemical Industry, 14 Belgrave Square, London, S.W. 1
- Civil Engineering—ASCE.** \$7 m American Society of Civil Engineers, 345 E 47th St, New York 10017
- Coal Age.** \$3 m McGraw-Hill, Inc. 330 W 42d St, New York 10036
- Combustion.** \$4 m Combustion Pub. Co. Inc. 277 Park Av, New York 10017
- Compressed Air Magazine.** \$5 m Compressed Air Magazine, Co. 942 Memorial Parkway, Phillipsburg, N.J. 08865
- Control Engineering.** \$10 m Reuben H. Donnelly Corp. 466 Lexington Av, New York 10017
- Corrosion.** \$10 m National Association of Corrosion Engineers, Inc. 2400 West Loop South, Houston, Tex. 77027

- Diesel Equipment Superintendent.** \$4 m Diesel Publications, Inc. 80 Lincoln Av. Stamford, Conn. 06904
- Domestic Engineering.** \$10 m Metallist Publications Inc. 1801 Prairie Av. Chicago 60616
- Drug & Cosmetic Industry.** \$5 m Drug Markets, Inc. 101 W 81st St. New York 10001
- Economic Geology and the Bulletin of the Society of Economic Geologists.** \$12 s-q Economic Geology Pub. Co. R. V. Dietrich, Business Editor, Box 26, Blacksburg, Va. 24060
- Electrical Communication.** \$2 q International Telephone and Telegraph Corp. 320 Park Av. New York 10022
- Electrical Construction and Maintenance.** \$3 m McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Electrical World.** \$8 w McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Electrochemical Society Journal.** \$24 m Electrochemical Society, 30 E 42d St. New York 10017
- Electronic Engineer.** \$12 m Chilton Co. Chestnut & 56th Sts. Philadelphia 19139  
Formerly Electronic Industries; changed August 1966
- Electronic Engineering.** £2 15s; U.S. \$8; Canada \$8 m Morkan Brothers, Ltd. 28 Essex St. Strand, London, W.C. 2
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- Electro-Technology.** \$15 m Conover-Mast Publications, Inc. 205 E 42d St. New York 10017
- Engineer.** £5 10s; U.S. \$16 w Morgan Brothers, Ltd. 28 Essex St. Strand, London, W.C. 2
- Engineering.** £5 10s w Engineering Ltd. 36 Bedford St. London, W.C. 2
- Engineering and Instrumentation.** See Journal of Research of the National Bureau of Standards
- Engineering and Mining Journal.** \$4 m McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Engineering Journal.** \$10 m Engineering Institute of Canada, 2050 Mansfield St. Montreal 2, Que.
- Engineering News-Record.** \$7 w McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Food Engineering.** \$25 m Chilton Co. Chestnut & 56th Sts. Philadelphia 19139
- Food Technology.** \$14.50 m Institute of Food Technologists, 221 North LaSalle St. Chicago 60601
- Foundry.** \$10 m Penton Pub. Co. Penton Bldg. Cleveland 44113
- Franklin Institute Journal.** \$20 m Franklin Institute of the State of Pennsylvania, Benjamin Franklin Parkway at 20th St. Philadelphia 19103
- Fundamentals.** See Industrial and Engineering Chemistry
- Gas.** \$9 m Chilton Co. 56th & Chestnut Sts. Philadelphia 19139
- Gas Age.** \$5 m Moore Pub. Co. Inc. Ojibway Building, Duluth, Minn. 55802
- Geological Society of America Bulletin.** \$35 m Geological Society of America, 231 E 46th St. New York 10017
- Geophysics.** \$10 bi-m Society of Exploration Geophysicists, 3707 E 51st St. Tulsa, Okla. 74135
- Glass Industry.** \$7 m Glass Pub. Co. Inc. 777 Third Av. New York 10017
- Heating, Piping & Air Conditioning.** \$5 m Reinhold Pub. Corp. Keeney Div. 10 S LaSalle St. Chicago 60603
- Hydraulics & Pneumatics.** \$12 m Industrial Pub. Co. 812 Huron Rd. Cleveland 44115
- Hydrocarbon Processing.** \$5 m Gulf Pub. Co. P.O. Box 2608, Houston, Tex. 77001  
Formerly Hydrocarbon Processing & Petroleum Refiner; changed June, 1966
- Hydrocarbon Processing & Petroleum Refiner.** \$4 m Gulf Pub. Co. P.O. Box 2608, Houston, Tex. 77001  
Name changed to Hydrocarbon Processing, June, 1966
- Ap Sci Ann/66**
- IEEE Proceedings.** m Institute of Electrical and Electronics Engineers, Inc. 345 E 47th St. New York 10017  
Price on request
- IEEE Transactions on Communication Technology.** \$30 bi-m Institute of Electrical and Electronics Engineers, Inc. 345 E 47th St. New York 10017  
Changed to bi-monthly February, 1966
- IEEE Transactions on Industry and General Applications.** \$30 bi-m Institute of Electrical and Electronics Engineers, Inc. 345 E 47th St. New York 10017
- IEEE Transactions on Power Apparatus and Systems.** m Institute of Electrical and Electronics Engineers, Inc. 345 E 47th St. New York 10017  
Price on request
- ISA Journal.** \$4 m Instrument Society of America, Penn-Sheraton Hotel, 530 William Penn Pl. Pittsburgh 15219
- Illuminating Engineering, the Journal of the Illuminating Engineering Society.** \$18 m Illuminating Engineering Society, 345 E 47th St. New York 10017
- Industrial and Engineering Chemistry.** m American Chemical Society, 1155 16th St. N.W. Washington, D.C. 20036  
Sold only in combination with one or more I&EC quarterlies; Process Design and Development (Ja); Fundamentals (F); Product Research and Development (Mr) One quarterly \$5; two \$8.50; three \$12 Subscriptions must begin with January and end with December.
- Industrial Electronics.** £3; U.S. and Canada \$10 m Iiffe Electrical Publications, Ltd. Dorset House, Stamford St. London, S.E. 1
- Industrial Finishing.** \$3 m Practical Publications, Inc. 1142 N. Meridian St. Indianapolis 46204
- Industrial Medicine and Surgery.** \$10 m Industrial Medicine Pub. Co. 1305 St. Clair Av. Sheboygan, Wis. 53081
- Industrial Photography.** \$6 m United Business Publications, Inc. 200 Madison Av. New York 10016
- Industrial Quality Control.** m American Society for Quality Control, Inc. 161 W Wisconsin Av. Milwaukee 53203
- Inland Printer/American Lithographer.** \$5 m Maclean-Hunter Pub. Corp. 300 W Adams St. Chicago 60606
- Institute of Metals Journal.** separate papers Institute of Metals, 17 Belgrave Square, London, S.W. 1
- Institute of Petroleum Journal.** £6 6s m Institute of Petroleum, 61 New Cavendish St. London, W. 1
- Institution of Electrical Engineers Proceedings.** £15 m The Institution, Savoy Place, London, W.C. 2
- Institution of Mechanical Engineers Proceedings.** separate papers Institution of Mechanical Engineers, 1 Birdcage Walk, Westminster, London, S.W. 1
- Instrument Society of America Journal.** See ISA Journal
- Instruments and Control Systems.** \$4 m Instruments and Control Systems, 845 Ridge Av. Pittsburgh 15212
- Iron Age.** \$25 w Chilton Co. Chestnut & 56th Sts. Philadelphia 19139
- Iron and Steel Engineer.** \$7.50 m Association of Iron and Steel Engineers, 1010 Empire Bldg. Pittsburgh 15222
- Iron and Steel Institute Journal.** £24 m Iron and Steel Institute, 4 Grosvenor Gardens, London, S.W. 1
- Journal of Agricultural and Food Chemistry.** \$20 bi-m American Chemical Society, 1155 16th St. N.W. Washington, D.C. 20036
- Journal of Applied Chemistry.** £18 m Society of Chemical Industry, 14 Belgrave Square, London, S.W. 1
- Journal of Applied Mechanics.** See ASME Transactions
- Journal of Applied Physics.** \$25 m (s-m Mr) American Institute of Physics, 335 E 45th St. New York 10017  
\$15 to members and associate members of the American Institute of Physics
- Journal of Basic Engineering.** See ASME Transactions
- Journal of Colloid and Interface Science.** \$36 m Academic Press Inc. 111 5th Av. New York 10003  
Formerly Journal of Colloid Science; changed January, 1966



- Journal of Colloid Science.** \$28 9 times a yr Academic Press Inc, 111 5th Av, New York 10003  
Name changed to Journal of Colloid and Interface Science January, 1966
- Journal of Engineering for Industry.** See ASME Transactions
- Journal of Engineering for Power.** See ASME Transactions
- Journal of Geology.** \$14 bi-m University of Chicago Press, 5750 Ellis Av, Chicago 60637
- Journal of Heat Transfer.** See ASME Transactions
- Journal of Mathematics and Physics.** \$8 q Massachusetts Institute of Technology, Cambridge, Mass. 02139
- Journal of Metals.** \$10 m American Institute of Mining, Metallurgical and Petroleum Engineers, Inc. 345 E 47th St, New York 10017
- Journal of Nutrition.** \$22.50 m Wistar Institute of Anatomy and Biology, 36th St at Spruce, Philadelphia 19104
- Journal of Petroleum Technology.** \$8 m Society of Petroleum Engineers of AIME, 6200 North Central Expressway, Dallas 75206
- Journal of Research of the National Bureau of Standards.** Superintendent of Documents, Washington, D.C. 20402  
Published in 4 sections: A. Physics and Chemistry \$5 bi-m; B. Mathematics and Mathematical Physics \$2.25 q; C. Engineering and Instrumentation \$2.75 q; D. Radio Science \$9 m. Became separate pub. January, 1965
- Journal of Scientific Instruments.** £8 m Institute of Physics and the Physical Society, 47 Belgrave Square, London, S.W. 1
- Light Metal Age.** \$5 bi-m Roy Fellow, Jr. 693 Mission St, San Francisco 94105
- Lubrication Engineering.** \$11 m American Society of Lubrication Engineers, 338 Busse Highway, Park Ridge, Ill. 60068
- Machine Design.** \$10 bi-w Penton Pub. Co. Penton Bldg, Cleveland 44113
- Machinery.** \$10 m Industrial Press, Inc. 200 Madison Av, New York 10016
- Magazine of Standards.** \$7 m United States of America Standards Institute, 10 E 40th St, New York 10016
- Manufacturing Chemist and Aerosol News.** £6; U.S. \$18 m Grampian Press, Ltd, The Tower, 229-243 Shepherds Bush Road, London, W.6
- Marine Engineering/Log.** \$6 m (s-m in June) Simmons-Boardman Pub. Corp, Emmett St, Bristol, Conn. 06010
- Materials in Design Engineering.** \$12 m Reinhold Pub. Corp, 430 Park Av, New York 10022  
Extra number published in Mid-October
- Materials Research & Standards.** \$5 m American Society for Testing and Materials, 1916 Race St, Philadelphia 19103
- Mathematics and Mathematical Physics.** See Journal of Research of the National Bureau of Standards
- Mechanical Engineering.** \$7 m American Society of Mechanical Engineers, 345 E 47th St, New York 10017
- Metal Finishing.** \$5 m Metals and Plastics Publications, Inc. 99 Kinderkamack Road, Westwood, N.J. 07675
- Metal Progress.** \$9 m American Society for Metals, Metals Park, Ohio. 44073
- Metallurgia, the International Journal of Metals & Materials.** £2 10s m Kennedy Press, Ltd, 31 King St, W Manchester 3  
Formerly Metallurgia, the British Journal of Metals, changed July, 1966
- Mill & Factory.** \$10 m Conover-Mast Publications, Inc. 205 E 42d St, New York 10017
- Mining Congress Journal.** \$3 m American Mining Congress, Ring Bldg, Washington, D.C. 20036
- Mining Engineering.** \$10 m American Institute of Mining, Metallurgical and Petroleum Engineers, Inc. 345 E 47th St, New York 10017
- Modern Materials Handling.** \$8 m Cahners Pub. Co, Inc. 221 Columbus Av, Boston 02116
- Modern Metals.** \$10 m Modern Metals Pub. Co, 435 N. Michigan Av, Chicago 60611
- Modern Photography.** \$5 m Modern Photography, 165 W 46th St, New York 10036
- Modern Plastics.** \$10 m McGraw-Hill, Inc. 330 W 42d St, New York 10036
- Modern Textiles Magazine.** \$5 m Rayon Pub. Corp. 303 Fifth Av, New York 10016
- Naval Engineers Journal.** \$20 bi-m American Society of Naval Engineers, Inc. 1012 14th St, N.W. Washington, D.C. 20005
- Nucleonics.** \$8 m McGraw-Hill, Inc. 330 W 42d St, New York 10036
- Oil and Gas Journal.** \$7 w Petroleum Pub. Co. 211 South Cheyenne, Tulsa, Okla. 74101
- Operations Research.** \$10 bi-m Operations Research Society of America, Mt Royal and Guilford Aves, Baltimore 21202
- Paper Industry.** \$5 m Paper Industry Management Assn, 2570 Devon Av, Des Plaines, Ill. 60018  
Name changed to American Paper Industry, January, 1966
- Petroleum Management.** \$7 m (s-m JI) Petroleum Engineer Pub. Co. 800 Davis Bldg, Dallas 75202
- Physics and Chemistry.** See Journal of Research of the National Bureau of Standards
- Physics Today.** \$4 m American Institute of Physics, 335 E 45th St, New York 10017
- Pit and Quarry.** \$7 m Pit and Quarry Publications, Inc. 431 S Dearborn St, Chicago 60605
- Plant Engineering.** \$10 m Technical Pub. Co. 308 E James St, Barrington, Ill. 60010
- Plastics Technology.** \$10 m Plastics Technology Magazine, 630 Third Av, New York 10017
- Plastics World.** \$8 m Cahners Pub. Co, Inc. 221 Columbus Av, Boston, Mass. 02116
- Plating.** \$10 m American Electroplaters' Society, Inc. 443-445 Broad St, Newark, N.J. 07102
- Power.** \$3 m McGraw-Hill, Inc. 330 W 42d St, New York 10036
- Power Engineering.** \$10 m Technical Pub. Co. 308 E James St, Barrington, Ill. 60010
- Process Design and Development.** See Industrial and Engineering Chemistry
- Product Engineering.** \$15 bi-w McGraw-Hill Inc. 330 W 42d St, New York 10036
- Product Research and Development.** See Industrial and Engineering Chemistry
- Progressive Architecture.** \$10 m Reinhold Pub. Corp. 430 Park Av, New York 10022
- Public Roads.** \$1.50 bi-m Superintendent of Documents, Washington, D.C. 20402
- Public Works.** \$7 m Public Works Journal Corp. 200 S Broad St, Ridgewood, N.J. 07450
- QST.** \$6 m American Radio Relay League, Inc. 225 Main St, Newington, Conn. 06111
- RCA Review.** \$2 q Radio Corporation of America, RCA Laboratories Division, Princeton N.J. 08540
- Radio and Electronic Engineer.** £6 10s m Institution of Electronic and Radio Engineers, 8-9 Bedford Square, London, W.C. 1
- Radio Corporation of America Review.** See RCA Review
- Radio-Electronics.** \$5 m Gernsback Publications, Inc. Boulder, Colo. 80302
- Radio Science.** \$9 m Superintendent of Documents, Washington, D.C. 20402  
Formerly Section D, Journal of Research of the National Bureau of Standards; changed January, 1966
- Research/Development.** m F. D. Thompson Publications, Inc. 205 W Wacker Drive, Chicago 60606
- Review of Scientific Instruments.** \$13 m American Institute of Physics, 335 E 45th St, New York 10017  
\$11 to members of scientific societies
- Roads and Streets.** \$6 m The Reuben H. Donnelly Corp, 466 Lexington Av, New York 10017
- Rock Products.** \$10 m Maclean-Hunter Pub. Corp. 300 W Adams St, Chicago 60606
- Royal Aeronautical Society Journal.** £10 10s m Royal Aeronautical Society, 4 Hamilton Place, London, W. 1
- Rubber Age.** \$5 m Palmerton Pub. Co, Inc. 101 W 31st St, New York 10001
- Rubber Chemistry and Technology.** \$14.50 5 times a yr American Chemical Society, Division of Rubber Chemistry, Prince and Lemon Sts, Lancaster, Pa. 17604
- Rubber World.** \$7 m Bill Brothers Pub. Corp. 630 3d Av, New York 10017



## LIST OF PERIODICALS INDEXED

- SAE Journal.** \$12 m Society of Automotive Engineers, Inc. 485 Lexington Av. New York 10017
- SMPTE Journal.** \$16 m Society of Motion Picture and Television Engineers. 9 E 41st St. New York 10017
- Safety Maintenance.** \$4 m Alfred M. Best Co. Inc. Box 600, Morristown, N.J. 07960
- Scientific American.** \$7 m Scientific American, Inc. 415 Madison Av. New York 10017
- Soap and Chemical Specialties.** \$4 m MacNair-Dorland Co. Inc. 254 W 31st St. New York 10011
- Soap Blue Book is extra number
- Society of Automotive Engineers Journal.** See SAE Journal
- Society of Dyers and Colourists Journal.** £8 8s m Society of Dyers and Colourists, Dean House 19 Piccadilly, Bradford 1, Yorkshire, England
- Society of Motion Picture and Television Engineers Journal.** See SMPTE Journal
- Space/Aeronautics.** \$15 m (s-m J1) Conover-Mast Publications, Inc. 205 E 42d St. New York 10017
- Steel.** \$25 w Penton Pub. Co. Penton Bldg. Cleveland 44113
- Tappi.** single numbers \$1.75 m Technical Association of the Pulp and Paper Industry. 360 Lexington Av. New York 10017
- Technical Association of the Pulp and Paper Industry.** See Tappi
- Textile Industries.** \$2 m (s-m Je) W. R. C. Smith Pub. Co. 1760 Peachtree Rd. N.W. Atlanta 30309
- Textile Research Journal.** \$25 m Textile Research Institute, Inc. Publications Department, P.O. Box 625, Princeton, N.J. 08540
- Textile World.** \$10 m McGraw-Hill, Inc. 330 W 42d St. New York 10036
- Tool and Manufacturing Engineer.** \$7.50 m American Society of Tool and Manufacturing Engineers, 20501 Ford Road, Dearborn, Mich. 48128
- Traffic Quarterly.** q Eno Foundation for Highway Traffic Control, Inc. Saugatuck, Conn. 06480
- Price on request
- Water & Sewage Works.** \$5 m Scranton Pub. Co. Inc. 35 E Wacker Drive, Chicago 60601
- Extra number published in the fall
- Water and Wastes Engineering.** \$5 m Water and Wastes Engineering, 466 Lexington Av. New York 10017
- Formerly Water Works and Wastes Engineering; changed January, 1966
- Water Pollution Control Federation Journal.** \$18.50 m Water Pollution Control Federation, 3900 Wisconsin Av. Washington, D.C. 20016
- Water Works and Wastes Engineering.** \$5 m Water Works and Wastes Engineering, 466 Lexington Av. New York 10017
- Name changed to Water and Wastes Engineering, January, 1966
- Welding Engineer.** \$3 m Welding Engineer Publications, Inc. 5826 Dempster St. Morton Grove, Ill. 60053
- Extra number published in Mid-June
- Welding Journal.** \$10 m American Welding Society. 345 E 47th St. New York 10017
- Westinghouse Engineer.** \$2.50 bi-m Westinghouse Engineer, P.O. Box 2278, 3 Gateway Center, Pittsburgh 15230
- Wire and Wire Products.** \$8; Canada \$8 m Haire Pub. Co. Inc. 111 Fourth Av. New York 10003
- Wireless World.** £2 6s; U.S. \$8; Canada \$8 m Iliffe Electrical Publications, Ltd. Dorset House, Stamford St. London, S.E. 1

## Key to General Abbreviations

+	continued on later pages of the issue	Jl	July
abr	abridged	Mr	March
Ag	August	My	May
Ap	April	N	November
bibliog	bibliography	n s	new series
comp	compiled or compiler	no	number
cond	condensed	O	October
cont	continued	p	page
D	December	pl	plate
diag	diagram	por	portrait
ed	edited or edition or editor	pt	part
F	February	rev	revised
il	illustrations	S	September
inc	incorporated	sup	supplement
Ja	January	tr	translated or translation or translator
Je	June	v	volume
		yrbk	yearbook

**Sample entry:** AUTOMOBILE racing  
GM-powered speedsters win two or three  
Nassau races. H. W. Barclay, il map  
Automotive Ind 134:19-21+ Ja 1 '66

**Explanation:** An illustrated article with map, on the sub-  
ject AUTOMOBILE racing entitled "GM-  
powered speedsters win two or three Nas-  
sau races," by H. W. Barclay, will be  
found in volume 134 of Automotive Indus-  
tries, page 19-21 (continued on later pages  
of the same issue) the January 1, 1966  
number





# Applied Science & Technology Index

1966

- AACC.** See American association for contamination control
- ABS resin.** See Resinous products
- ACTH**  
Adrenocorticotropins; synthesis of a biologically active prolinal analog of the non-adeceptide corresponding to the amino-terminal portion of the ACTH molecule. W. Oelofsen and C. H. Li. bibliog Am Chem Soc J 88:4254-60 S 20 '66
- AALTO, Alvar**  
Aalto revisited. il plans diag Arch Forum 124:70-9 Ap '66
- ABATTOIRS.** See Slaughtering and slaughter houses
- ABBREVIATIONS**  
See also  
Acronyms  
Symbols
- ABERRATION (optics)**  
Precision method for evaluating primary aberrations of lenses with a Twyman interferometer. J. B. Saunders. il diags J Res Nat Bur Stand 69C:251-5 O '66  
Some applications of the wave front shearing interferometer. J. B. Saunders. il diags J Res Nat Bur Stand 69C:245-9 O '66
- ABILITY**  
See also  
Creative ability
- ABILITY tests**  
Four-point approach to appraising managerial talent. E. Raudsepp. Machine Design 38:92-9 F 3 '66  
Graduate-record examination advanced physics test as a predictor of performance. W. C. Michels. Am J Phys 34:862-6 pt 2 S '66  
Job laws prompt reshaped hiring practices. Chem & Eng N 43:25 N 22 '65  
Word association tests point to snags in controls. J. Kolb. il Product Eng 37:42-4 O 24 '66
- ABLATION shielding.** See Shielding (heat)
- ABPLANALP, Robert H.**  
Honored by New York advertising club. por Soap & Chem Spec 42:139+ JI '66
- ABRAMS, Allen**  
TAPPI gold medal; with presentation and acceptance speech. G. W. E. Nicholson. por Tappi 49:sup51A-3A Mr '66
- ABRASION**  
Abrasion resistance and high speed tensile strength of elastomers. R. Ecker. bibliog diag Rubber Chem & Tech 39:823-40 S '66  
Abrasion resistance: some tests misleading. E. Green. Ind Finishing 42:76 Ja '66  
Abrasion resistance test methods. H. Tovey. Am Dyestuff Rep 55:635-6 Ag 15 '66  
Abrasion-resistant durable-press cottons. W. A. Reeves and others. bibliog Textile Ind 130:107-8+ S '66  
Chrome alloy strips resist abrasion. il Welding Eng 51:68-9 Ja '66  
Fresh look at abrasion in the mill. Eng & Min J 167:186-8 S '66  
Hardness and abrasion resistance of bright silver electrodeposits; tr. by D. G. Foulke. E. Weiner. Plating 53:894-8 JI '66  
Is abrasion wearing you down? W. S. Hutchings. il diags Rock Prod 69:86-7 S '66  
Relation between abrasion and strength of rubber. K. A. Grosch and A. Schallamach. bibliog il diag Rubber Chem & Tech 39:287-305 Mr '66  
Report of subcommittee on frosting of national research committee RA29. J. P. Patton, jr. il Am Dyestuff Rep 55:638-41 Ag 15 '66  
Report of subcommittee on simulated end use of national research committee RA-29; method for determining abrasion resistance of fabric. E. L. Wright. Am Dyestuff Rep 55:636-8 Ag 15 '66  
Short investigation of grafting as a method for improving abrasion resistance of cross-linked cotton. H. F. Prael and others. bibliog Textile Res J 36:245-50 Mr '66  
Sprayed ceramics protect equipment. J. M. Karet. il Chem Eng 73:178+ Je 6 '66
- ABRASIVE belts**  
Centreless grinding by abrasive belt. il Engineering 201:89-90 Ja 14 '66  
Coated abrasive belts can help foundries. Steel 157:33 D 13 '65  
Controlling belt air. W. A. Fazioli. il Tool & Manuf Eng 57:32-4 JI '66; Same. diag Mill & Factory 79:52-3 Ag '66  
More efficient exhaust systems for abrasive-belt grinding. W. A. Fazioli. diags Mach 72:99-101 JI '66
- ABRASIVES**  
Abrasion vs. acid pickling. il Chem & Eng N 44:22-3 O 3 '66  
Abrasive machining gets more muscle. A. W. Young. il Iron Age 197:112 My 26 '66  
Abrasive machining in focus. J. E. Haggett. il diag Am Mach 110:70-1 Ag 29 '66  
Abrasive maker's systems approach opens new markets. il Steel 157:37-41 D 27 '65  
Abrasives industry sets sights for rough grind. il Iron Age 197:108 Mr 10 '66  
Chemical and mechanical mechanisms in wear of sapphire on steel. N. S. Eiss, jr. and R. C. Fabinak. bibliog il diags Am Cer Soc J 49:221-6 Ap '66  
High precision abrasive machining. R. C. Merrick. il diag Mach 73:109-13 S '66  
Nitrogen-doped synthetic diamond abrasive. Metallurgia 73:190 Ap '66  
Selection and use of chemical compounds for vibratory finishing. W. E. Brandt. il Tool & Manuf Eng 56:26-30 Mr '66  
See also  
Abrasive belts  
Metal finishing  
Polishing
- ABSENTEEISM (labor)**  
Absenteeism; a study in controls. W. F. Kliesch and M. K. Wheeler. diags Ind Med 35:190-1+ Mr '66  
How mental health affects company progress. L. N. Loban. Ind Med 35:683-7 Ag '66  
Social causes of sick absence. P. E. Enterline. bibliog Archives Environmental Health 12:467-73 Ap '66  
Some economic estimates of job disruption. W. W. Winslow and others. bibliog Archives Environmental Health 13:213-19 Ag '66  
See also  
Sickness
- ABSORBENTS**  
Chemical dehumidification protects microfilm records stored in mountain vaults. N. W. Clayton and G. H. Fudge. il Heating-Piping 38:127-9 O '66



## ABSORPTION

- Absorptionmetric methods in rapid silicate analysis. C. O. Ingamells. *bibliog Anal Chem* 38:1228-34 Ag '66
- Absorption, degassing, and solution equilibrium in the nitrogen-niobium system at ultrahigh vacuum and high temperature. R. A. Pasternak and others. *bibliog Electrochem Soc J* 113:731-5 J1 '66
- Absorption of electrolytically generated hydrogen. F. Matsuda and T. C. Franklin. *bibliog diag Electrochem Soc J* 112:767-71; 113:641-2 Ag '66, Je '66
- Absorption rate of hydrogen in steel. F. de Kazinczy and N. B. Hannerz. *Iron & Steel Inst J* 203:1144-5 N '65
- Application of penetration theory to gas absorption on a sieve tray. R. K. Smith and G. B. Wills. *bibliog diag Ind & Eng Chem Proc Design* 5:39-44 Ja '66
- Atomic absorption spectroscopy with induction-coupled plasmas. R. H. Wendt and V. A. Fassel. *diag Anal Chem* 38:337-8 F '66
- Computation of absorption corrections, and the significance of end effect. C. W. Burnham. *bibliog Am Mineralogist* 51:159-67 Ja '66
- Critical factors in the determination of the alkaline earth elements in glass by atomic absorption spectrometry. P. B. Adams and W. O. Passmore. *bibliog Anal Chem* 38:630-3 Ap '66
- Design equations for multicomponent gas absorptions. H. T. Cullinan, Jr. *bibliog Can J Chem Eng* 44:58-9 F '66
- Determination of trace amounts of lead in steels, brass, and bronze alloys by atomic absorption spectrometry. R. M. Dagnall and others. *bibliog Anal Chem* 38:358-60 F '66
- Effect of monomolecular films on the rate of gas absorption into a quiescent liquid. R. E. Plevan and J. A. Quinn. *bibliog diag AIChE J* 12:894-902 S '66
- Effect of wave induced turbulence on the rate of absorption of gases in falling liquid films. J. C. Jepsen and others. *bibliog II diag AIChE J* 12:186-92 Ja '66
- Effects of heat of sorption in the wool-water sorption system. L. C. Watt and G. B. McMahon. *Textile Res J* 36:738-45 Ag '66
- Fluid-carbon columns for sorption of persistent organic pollutants; abstract. W. J. Weber, Jr. *WATER J* 33:31-2 Mr '66
- Gas absorption in horizontal concurrent bubble flow. J. S. Scott and W. Hayduk. *bibliog flow diag Can J Chem Eng* 44:130-6 Je '66
- Hermetic sealing improves absorption machinery. W. J. McGuinness. *diag Prog Arch* 46:178 D '65
- High-Q Fabry-Perot interferometer for water vapor absorption measurements in the 100 gc/s to 300 gc/s frequency range. E. P. Valkenburg and V. E. Derr. *bibliog II diag IEEE Proc* 54:493-8 Ap '66
- Influence of gravitational force on gas absorption in a packed column. J. E. Vivian and others. *bibliog AIChE J* 11:1088-91 N '65
- Local mode absorption of Al and P in GaAs. O. G. Lorimor and others. *bibliog J Ap Phys* 37:2599 My '66
- Mass transfer with reaction occurs five ways. *Chem & Eng N* 44:48-9 Ag 1 '66
- Paramagnetic absorption of irradiated glycine. H. C. Box and others. *bibliog Am Chem Soc J* 88:658-61 F 20 '66
- Radioisotope technique for the study of refractory/melt reactions. E. Snape and P. R. Beeley. *diag Inst Metals J* 94:258-61 '66
- Relationship between resonance line profile and absorbance in atomic absorption spectrometry. K. Yasuda. *bibliog diag Anal Chem* 38:592-9 Ap '66
- Response of a gas-liquid interface to concentration pulses. S. Whitaker and R. L. Pigford. *bibliog diag AIChE J* 12:741-6 J1 '66
- Solvent counter-diffusion in gas absorption. P. Grenier. *bibliog Can J Chem Eng* 44:213-16 Ag '66
- Some laboratory evaluations of bituminous coalings. H. C. O'Brien. *bibliog II diag Ind & Eng Chem* 58:45-54 Je '66
- Study of the feasibility of the iron hollow cathode as a multi-element atomic absorption unit. C. W. Frank and others. *bibliog Anal Chem* 38:1005-8 J1 '66
- Surface motion and gas absorption. K. Muenz and J. M. Marchello. *bibliog diag AIChE J* 12:249-53 Mr '66
- Temperature-modulated optical absorption in semiconductors. C. N. Berglund. *bibliog diag J Ap Phys* 37:3019-23 J1 '66
- See also  
Silica gel  
Sound—Absorption

## ABSORPTION (physiology)

- Absorption and binding of DDT by the central nervous system of the American cockroach. F. Matsumura and R. D. O'Brien. *bibliog J Agri & Food Chem* 14:36-9 Ja '66
- Absorption and secretion of some organic and inorganic constituents and the distribution of these constituents throughout the alimentary tract of young calves. M. G. Yang and J. W. Thomas. *J Nutrition* 87:444-58 *bibliog*(p457-8) D '65
- Absorption of amino acids from the small intestine of domestic fowl. I. Tasaki and N. Takahashi. *bibliog J Nutrition* 88:359-64 Ap '66
- Absorption of steroids. *Drug & Cosmetic Ind* 97:923 D '65
- Comparative absorption of calcium from calcium gluconate and calcium lactate in man. H. Spencer and others. *bibliog J Nutrition* 89:283-92 J1 '66
- Dietary metal-complexing agents and zinc availability in the rat. D. Oberleas and others. *bibliog J Nutrition* 90:56-62 S '66
- Drug absorption. *Drug & Cosmetic Ind* 98:142 My '66
- Effect of a low iron diet on iron absorption. E. Rush and others. *bibliog Am J Clinical Nutrition* 19:132-6 Ag '66
- Effect of calcium, phosphorus and zinc on zinc-65 absorption and turnover in rats fed semipurified diets. D. A. Heth and others. *bibliog J Nutrition* 88:331-7 Mr '66
- Effect of intestinal damage produced by eimeria necatrix infection in chicks upon absorption of orally administered zinc-65. D. E. Turk and J. E. Stephens. *bibliog J Nutrition* 88:261-6 Mr '66
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Dehumidification

Electricity in air conditioning

Exhaust systems

Gas in air conditioning

Ventilation

also subdivision Air conditioning under special subjects. e.g.

Apartment houses

Auditoriums

Bank buildings

College buildings

Courthouses

Factories

Hospitals

Hotels

Insurance company buildings

Laboratories

Motels

Newspaper offices

Office buildings

Pharmaceutical laboratories

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Formaldehyde  
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*See also*

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Equations, Linear  
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**ALIGNMENT of machinery.** *See* Alinement of machinery

**ALINEMENT**

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- Aluminum trends in India. S. K. Ghaswala. *II Light Metal Age 24:6-7+ F '66*

**Norway**

- Norway aluminum boom continues. *Light Metal Age 24:21 Je '66*
- Norway completes aluminum expansion. *Light Metal Age 23:23 O '65*

**ALUMINUM metallurgy**

- Peculiarities of aluminum metallurgy and its impact on the metallurgy of other metals. J. J. Baron. *Inst Metals J 94:161-8 '66*

**Electrometallurgy**

- Columbia Falls capacity increased to 200,000,000 lbs. with third potline. *II Light Metal Age 23:18 O '65*
- Pulses boost aluminum cell efficiency. *Steel 153:24 Je 27 '66*

**ALUMINUM ores**

See also  
Bauxite

**ALUMINUM oxides**

- Theoretical model for predicting aluminum oxide particle size distributions in rocket exhausts. H. L. Fein. *diags AIAA J 4:92-8 Ja '66; Correction. 4:960 My '66*

See also  
Alumina

**ALUMINUM paint. See Aluminum—Paint****ALUMINUM phosphide**

- Vapor growth of AlP single crystals. F. J. Reid and others. *diag Electrochem Soc J 113:467-9 My '66*

**ALUMINUM pipes. See Pipes, Aluminum****ALUMINUM plates**

- Buckling of aluminum columns, plates, and beams. J. W. Clark and R. L. Rolf. *bibliog II Am Soc C E Proc 92 (IST 3 no 4833):17-38 Je '66*
- Operating nine million lb. plate stretcher. *II Light Metal Age 24:13-14 F '66*
- Roll extra heavy plate at Ravenswood. *II Light Metal Age 24:24 F '66*

**ALUMINUM plating**

- Improved aluminum plating. *Product Eng 36:58 D 20 '65*
- Properties of electroformed aluminum. F. J. Schmidt and I. J. Hess. *II diag Plating 53:229-34 F '66*

**ALUMINUM roofs. See Roofs, Aluminum****ALUMINUM ships. See Ships, Aluminum****ALUMINUM silicates**

- Nature of the component layers of rectorite. II Kodama. *II Am Mineralogist 51:1035-56 bibliog (p 1054-5) JI '66*

See also

- Albite  
Annalcite  
Bentonite  
Cordierite  
Tourmaline

**ALUMINUM sulfate**

- Coagulation and reversal of charge of lyophobic colloids by hydrolyzed metal ions. E. Matijevic and L. J. Stryker. *bibliog J Colloid & Interface Sci 22:68-77 JI '66*

See also

- Alunite

**ALUMINUM tanks. See Tanks, Aluminum****ALUMINUM towers. See Towers, Aluminum****ALUMINUM waste**

- Chip collection system; centrifugal separators reduce waste by swallowing uncontaminated metal particles. *II Comp Air Mag 71:15 Ja '66*

**ALUMINUM window frames. See Window frames, Aluminum****ALUMINUM wire. See Wire, Aluminum****ALUMINUM work**

- Aluminum billet lathe. *II Engineer 221:899 Je 10 '66*
- Aluminum die forgings; reference book sheet. *Am Mach 109:117 D '65*

- Aluminum impact extrusions. F. J. Hall. *II diags Machine Design 38:140-4 Ag 4 '66*
- Balcony railings provide design, engineering flexibility. *II Mod Metals 22:52 F '66*

- Better performance at lower cost is being twisted into helicopter blades. *II Product Eng 37:69 Mr 14 '66*

- Brazing and soldering aluminum; perspective 1966. G. O. Hoglund. *Machine Design 38:258+ Ap 28 '66*

- Chemical milling of the aluminum alloys. *Mach 72:166 Mr '66*

- Cold extrude rapidly to produce long, thin-wall aluminum tubes. R. B. Pond. *II Metal Prog 89:77-9 Je '66*

- Dip-brazed aluminum assemblies. M. A. Krebs. *II diags Machine Design 38:158-63 Ag 18 '66*

- Dynapak extrudes aluminum. *diag Steel 158:541 Je 6 '66*

- Explosive forming limits of aluminum. J. J. Burns and others. *II diag Tool & Manuf Eng 56:56-9 Je '66*

- Fastener holes punched faster and cheaper with standard tooling. *II Mod Metals 22:52+ My '66*

- Flying die speeds roll forming. G. DeGroat. *II diag Am Mach 110:78-9 F 28 '66*

- For strong joints, try bonding aluminum parts. F. E. Hall. *II Product Eng 37:91-3 F 28 '66*

- Forged aluminum pistons. J. Geschell. *II diags Automotive Ind 134:67-9 Je 1 '66*

- How to fabricate aluminum sheet for building applications. *diags Mod Metals 21:33+ Ap; 42+ S; 44+ D '65; 22:66+ Mr; 44+ My '66 (reprints \$1)*

- Install high volume extrusion painting line. *II Light Metal Age 24:3+ F '66*

- Keeping the snakes rolling. G. DeGroat and J. Ranill. *II Am Mach 110:108-9 Ag 1 '66*

- King-size high energy rate forming machine. *II Light Metal Age 24:22 Ag '66*

- Machining lightweight diecastings on a dial machine. *II diags Mach 72:109-12 Mr '66*

- Magnesium vs aluminum in extruded luggage frames. M. Reimann. *II Mod Metals 22:66-8 My '66*

- Milling boosts lunar payload. R. H. Nansen and G. T. Albert. *II diags Am Mach 110:71-4 F 28 '66*

- Profit problems of independents. *Light Metal Age 24:23 F '66*

- Prosperity kick brightens extrusion game. W. L. Griffin. *Mod Metals 22:48+ Je '66*

- Simplified etch process to boost aluminum in building appliances, auto trim markets. *II diags Mod Metals 22:62+ Mr '66*

- Special units speed aluminum production. *II Light Metal Age 24:25 F '66*

- Vacation house sports walls of prefabricated aluminum sandwich. *II Mod Metals 22:73+ N '66*

See also  
Aluminum—Finishing  
Aluminum—Welding  
Aluminum founding

**ALUMINUM works**

- Engineering control of industrial air pollution; state of the art, 1966. S. C. Rothman. *bibliog II diags Heating-Piping 38:141-8 Mr '66*

- Intalco smelter puts lid on air pollution. *II diag Steel 159:42 S 5 '66*

**Equipment**

- Aluminum foil rolling mill in North Carolina. *II Engineer 222:431-2 S 16 '66*

- Aluminum section rolling machine. *II Engineer 221:130 Ja 21 '66*

- Aluminum sheet rolling mill in Indiana. *II Engineer 222:335-6 Ag 26 '66*

- Aluminum works modernisation. *II Engineer 222:520-1 O 7 '66*

- Automated slitting line increases distributor's productivity. *II Mod Metals 22:84 My '66*

- Columbia Falls capacity increased to 200,000,000 lbs. with third potline. *II Light Metal Age 23:18 O '65*



**ALUMINUM works—Equipment—Continued**

- Computers supervise production of aluminum sheet. *il Automation* 13:95-7 N '66
- Impalco re-equip aluminum plant. *il Engineering* 202:645 O 7 '66
- Packaged aluminum extrusion plant for Germany. *il Engineer* 220:887 N 26 '65
- Republic Foil installs continuous casting unit. *il Steel* 153:49+ Je 13 '66
- Single-purpose sheet mill groomed for mass markets. F. L. Church. *il Mod Metals* 22: 94+ Je '66
- Warrick Operations, fastest rollers of aluminum. *il Light Metal Age* 24:6-8+ Je '66

**Power**

- Parallel operation of transducer-controlled silicon-rectifier equipment with water-wheel-driven d.c. generators supplying an aluminum potline. N. W. Notani and others. *bibliog diags Inst E E Proc* 112:965-76 My '65; Discussion. 113:1217-19 JI '66

**ALUMS**

- Diffusivities of ammonium and potassium alums in aqueous solutions. J. W. Mullin and others. *J Ap Chem* 15:502-5 N '65

**See also****Aluminum sulfate****ALUNITE**

- Sulfate studies: the jarosite, natrojarosite, hydronium jarosite solid solution series. G. P. Brophy and M. F. Sheridan. *Am Mineralogist* 50:1595-607 *bibliog(p 1605-7)* O '65
- Sulfur isotopes in pyrite, pyrrhotite, alunite and anhydrite from steam wells in the Taupo Volcanic Zone, New Zealand. A. Steiner and T. A. Rafter. *map Econ Geol* 61:1115-29 *bibliog(p 1125-9)* S '66

**ALVAREZ, Luis**

- Michelson award. *por Phys Today* 19:142 Ja '66

**AMALGAMS**

- Electrolysis with constant potential; diffusion currents for the formation of an amalgam at a hanging mercury drop electrode. W. G. Stevens and I. Shain. *bibliog Anal Chem* 33:865-7 Je '66
- High pressure capillary thallium-amalgam arc for use in ultraviolet. W. C. Worsham and others. *diag R Sci Instr* 37:1084-5 Ag '66
- Lithium amalgam-lithium chloride and thallium amalgam-thallous chloride electrodes in lithium chloride-dimethyl sulfoxide solutions. D. R. Corley and J. N. Butler. *bibliog diags Electrochem Soc J* 113:1074-8 O '66
- Performance characteristics of fluorescent lamps utilizing amalgam control of mercury-vapor pressure. G. S. Evans and P. E. Snyder. *bibliog il Illum Eng* 61:51-7 Ja '66
- Powder shape determines ease of filling cavity. *il Steel* 153:106 My 2 '66
- Reference electrode for use in dimethyl sulfoxide; thallium amalgam-thallous chloride. W. H. Smyrl and C. W. Tobias. *bibliog Electrochem Soc J* 113:754-5 JI '66
- Simple procedure for measurement of Hg vapor pressure of amalgams. J. M. Margolis. *diags R Sci Instr* 37:895-6 JI '66
- Valency of aluminum ions and the anodic disintegration of the metal. M. E. Straumanis and K. Poush. *bibliog il Electrochem Soc J* 112:1185-8 D '65; Discussion. 113:1345-6 D '66

**AMARYLLIDACEAE**

- Mass spectrometry in structural and stereochemical problems; a study of the fragmentation of some amaryllidaceae alkaloids. A. M. Duffield and others. *bibliog Am Chem Soc J* 87:4902-12 N 5 '65

- Total synthesis of (+)-crinine. H. Muxfeldt and others. *Am Chem Soc J* 88:3670-1 Ag 5 '66

**AMATEUR moving pictures. See Moving pictures, Amateur****AMATEUR radio emergency corps**

- How to join the AREC. G. Hart. *QST* 50:63-5 JI '66

**AMATEUR radio operators. See Radio operators, Amateur****AMBERGRIS. See Perfumery****AMBULANCES**

- Ambulances and emergency medical care. H. W. Mitchell. *bibliog Am J Pub Health* 55: 1717-24 N '65

- Equipment and training for ambulance crews. *il Safety Maint* 132:40-4 S '66

- Handling of emergency cases. R. H. Kennedy. *Archives Environmental Health* 13:511-15 O '66

- Utilization of ambulance services in a rural community. J. A. Waller and others. *bibliog map Am J Pub Health* 56:513-20 Mr '66

**AMERICAN architecture. See Architecture, American****AMERICAN association for contamination control**

- Annual technical meeting and exhibit, Houston, Tex. March 29-April 1; abstracts of papers. *Heating-Piping* 38:122-3 My '66

**AMERICAN association of cost engineers**

- Annual meeting, 10th. Philadelphia, June 20-22; abstracts of papers. *Heating-Piping* 38:137-8 Ag '66

**AMERICAN association of petroleum geologists**

- Annual meeting, 51st. St. Louis, April 25-28; with program and abstracts of papers. *Am Assn Pet Geologists Bul* 50:596-642, 1796-830, Mr. Ag '66

- History of the American association of petroleum geologists; first fifty years. H. T. Morley. *il Am Assn Pet Geologists Bul* 50: 672-820 Ap '66

- Membership directory. *Am Assn Pet Geologists Bul* 50:1-285 pt 2 Mr '66

- Pacific section annual meeting, 41st, Long Beach, Calif. March 24-26; with abstracts of papers. *Am Assn Pet Geologists Bul* 50:642-52 Mr '66

- Rocky Mountain section, 16th annual meeting. Denver, Oct. 23-27. *Oil & Gas J* 64: 136-9 O 17 '66

- Rocky Mountain section 16th annual meeting. Denver, Colo. Oct. 23-27; program and abstracts of papers. *Am Assn Pet Geologists Bul* 50:2027-39 S '66

**AMERICAN association of physics teachers**

- Annual meeting, 35th. New York, Jan. 26-29; with abstracts of papers. *Am J Phys* 34:718-33 Ag '66

- Colorado-Wyoming section meeting, April 22-23; abstracts of papers. *Am J Phys* 34:995-9 O '66

- Joint annual meeting with American physical society, New York, Jan. 26-29; preview and list of exhibitors. *Phys Today* 19:79-92 Ja '66

- Proceedings. *Am J Phys* 34:634-8 JI '66

- Summer meeting, Knoxville, Tenn. June 17-19; with abstracts of papers. *Am J Phys* 34:180-8 F '66

**AMERICAN association of railway surgeons**

- Annual meeting, 78th. Chicago, April 21-23. *Ind Med* 35:244-7, 453-6 Ap, Je '66

**AMERICAN association of state highway officials**

- Annual meeting, New York, Oct. 4-7. *Roads & Sts* 108:58-9 N '65

**AMERICAN association of textile chemists and colorists**

- Council highlights, 241st meeting, Chicago, Oct. 13. *Am Dyestuff Rep* 55:25 Ja 3 '66

- Council meeting, 242d. New York, Nov. 19; highlights. *Am Dyestuff Rep* 55:175-7 F 28 '66

- Council meeting, 243d. New York, Feb. 18; highlights. *Am Dyestuff Rep* 55:426 My 23 '66

- National convention, Chicago, Oct. 13-15; abstracts of papers. *Mod Textiles Mag* 46: 41-3 D '65; 47:49-50 Ja '66; *Textile World* 115:103-4 D '65

- National convention, Chicago, Oct. 13-15; with abstracts of papers. *Textile Ind* 129: 111-12+ D '65

- National technical conference, Atlantic City, N.J. Sept. 29-Oct. 1; program. *Mod Textiles Mag* 47:37-8+ S '66

- National technical conference, Atlantic City, N.J. Sept. 29-Oct. 1; with program, abstracts of papers and list of exhibitors. *il Am Dyestuff Rep* 55:716-66 S 12 '66

- President's address. F. Fortes. *Am Dyestuff Rep* 54:1123-32 D 20 '65

- Role of the national headquarters of AATCC. G. P. Paine. *il Am Dyestuff Rep* 55:542-4 JI 4 '66

**Committee on research**

- Minutes of 218th meeting. *Am Dyestuff Rep* 55:128-32 F 14 '66

- Minutes of the 219th meeting. *Am Dyestuff Rep* 55:403-9 Je 6 '66

**AMERICAN ceramic society**

- Annual meeting, 68th. Washington, May 7-12; with preview, honor list and exhibit in print of materials and equipment. *Cer Ind* 86:68-100 Ap; 77-80 Je '66

- Annual meeting, 68th. Washington, May 7-12; with program and floor plans. *Am Cer Soc Bul* 45:341-62 Ap '66

- Membership roster. *Am Cer Soc Bul* 45:855-87+ O '66

## AMERICAN ceramic society—Continued

## Basic science division

Annual meeting, Washington, May 9-11; program and abstracts of papers. *Am Cer Soc Bul* 45:363+ Ap '66  
 Fall meeting, University Park, Pa. Oct. 9-11; program and abstracts of papers. *Am Cer Soc Bul* 45:303-5+ S '66

## Ceramic-metal systems division

Annual meeting, Washington, May 9-11; program and abstracts of papers. *Am Cer Soc Bul* 45:337+ Ap '66  
 Fall meeting, Oak Brook, Ill. Sept. 18-21; program and abstracts of papers. *Am Cer Soc Bul* 45:745-8 Ag '66

## Design division

Annual meeting, Washington, May 9-11; program. *Am Cer Soc Bul* 45:397+ Ap '66

## Electronics division

Annual meeting, Washington, May 9-11; program and abstracts of papers. *Am Cer Soc Bul* 45:401+ Ap '66  
 Fall meeting, Des Plaines, Ill. Sept. 25-28; program and abstracts of papers. *Am Cer Soc Bul* 45:752-6+ Ag '66

## Glass division

Annual meeting, Washington, May 9-11; program and abstracts of papers. *Am Cer Soc Bul* 45:417+ Ap '66  
 Fall meeting, Bedford, Pa. Oct. 13-16; program and abstracts of papers. *Am Cer Soc Bul* 44:713-16 S '66; *Glass Ind* 46:719-21+ D '66  
 Fall meeting, Bedford, Pa. Oct. 12-14; program and abstracts of papers. *Am Cer Soc Bul* 45:811-13+ S '66

## Materials and equipment division

Annual meeting, Washington, May 10-11; program and abstracts of papers. *Am Cer Soc Bul* 45:437+ Ap '66  
 Fall meeting, Bedford, Pa. Sept. 28-Oct. 1; program and abstracts of papers. *Am Cer Soc Bul* 45:793-7 S '66

## Nuclear division

Fall meeting and Pacific Coast regional meeting, Portland, Ore. Oct. 26-28; programs and abstracts of papers. *Am Cer Soc Bul* 45:819-29 S '66

## Refractories division

Annual meeting, Washington, May 9-11; program and abstracts of papers. *Am Cer Soc Bul* 45:441+ Ap '66  
 Fall meeting, Bedford, Pa. Oct. 6-8; program and abstracts of papers. *Am Cer Soc Bul* 45:799-801 S '66

## Structural clay products division

Annual meeting, Washington, May 9-11; program and abstracts of papers. *Am Cer Soc Bul* 45:455+ Ap '66  
 Fall meeting, Canton, Ohio, Sept. 21-24; program and abstracts of papers. *Am Cer Soc Bul* 45:749-51 Ag '66

## Whiteware division

Annual meeting, Washington, May 9-11; program and abstracts of papers. *Am Cer Soc Bul* 45:461+ Ap '66  
 Fall meeting, Bedford, Pa. Sept. 28-Oct. 1; program and abstracts of papers. *Am Cer Soc Bul* 45:795-7 S '66

## AMERICAN chemical society

Alden Emery retires after 30 years of service. *Chem & Eng N* 44:100-2 Je 13 '66  
 Amendment of constitution and bylaws. *Chem & Eng N* 44:42-9 Ag 22 '66  
 ACS adopts new clinical lab principles. *Chem & Eng N* 44:38+ O 17 '66  
 ACS names 31 to be honored for outstanding work. *Chem & Eng N* 44:92-3 S 19 '66  
 ACS opens new regional clearing house. *Chem & Eng N* 44:60-1 Ja 3 '66  
 Annual report, 1965. *Chem & Eng N* 44:sup 1A-23A Ap 4 '66  
 Board of directors minutes and reports of committees. *Chem & Eng N* 43:74-91 N 8 '66; 44:52-4+ Ag 1 '66  
 Committee on professional training for 1965; progress report. *Chem & Eng N* 44:78-83 Mr 7 '66  
 Great Lakes regional meeting, Chicago, June 16-17; program. *Chem & Eng N* 44:70+ My 20 '66  
 Journal of chemical documentation issue typeset with aid of computer. *Chem & Eng N* 44:58-60 Mr 14 '66

Middle Atlantic regional meeting, Philadelphia, Feb. 3-4; program. *Chem & Eng N* 43:37-41 D 27 '65

Midwest regional meeting, Lawrence, Kan. Oct. 27-29; program. *Chem & Eng N* 44:74+ O 3 '66

National meeting, 151st, Pittsburgh, March 22-31; program, board of directors minutes and reports of committees. *Chem & Eng N* 44:74-112 F 14; 62-88 My 23 '66

National meeting, 152d and triennial Chemical exposition U.S.A., New York, Sept. 11-16; with program, list of exhibitors and floor plans. *Chem & Eng N* 44:48-134 Ag 8 '66

Officers, directors, councilors, and committees. *Chem & Eng N* 44:56-64 F 14 '66

Officers of local sections and divisions and chapters of student affiliates. *Chem & Eng N* 44:65-6+ Mr 21 '66

Projected divisional programs. *Chem & Eng N* 43:94-100 D 13 '65

Reports from the board of directors meeting and reports of committees. *Chem & Eng N* 44:62-75 Ja 24 '66

Sections cited for 1965 achievements. *Chem & Eng N* 44:82+ O 10 '66

Society honors 50-year members. *Chem & Eng N* 44:78+ Ap 4 '66

Southeastern-Southwestern regional meeting, Memphis, Tenn. Dec. 2-4; program. *Chem & Eng N* 43:92+ N 8 '65

Winter meeting, Phoenix, Ariz. Jan. 16-21; program. *Chem & Eng N* 43:74-92 D 13 '65

## Chemical abstracts service

Chemical abstracts service's computer search system nears operational status. *Chem & Eng N* 43:92+ N 8 '65  
 Chemical literature expands. *Chem & Eng N* 44:84-6+ Je 6 '66

## Division of rubber chemistry

Best paper committee; past, present, future. *Rubber Chem & Tech* 39:sup cxviii-cxxix S '66

Fall meeting, New York, Sept. 14-16; program and abstracts of papers. *Rubber Age* 98:65-72 J1 '66

Fall meeting, Philadelphia, Oct. 20-22; program and abstracts of papers. *Rubber Age* 97:70-7 Ag; 112-14 N '65; *Rubber World* 152:51-6+ S '65

Meeting, San Francisco, May 2-6; with program and abstracts of papers. *Rubber Age* 98:81-92 Mr '66; *Rubber World* 153:79-87 Mr '66

Rubber chemists recording history. *Chem & Eng N* 44:70 F 21 '66

Spring meeting, 1966, San Francisco. *Rubber Chem & Tech* 39:sup lxx-lxxii Je '66

## AMERICAN concrete institute

ACI awards; eleven awardees cited at 62d convention. *Am Concrete Inst J* 63:sup25+ Ap '66

ACI in the service of mankind. A. A. Bates. *Am Concrete Inst J* 63:521-6 My '66

ACI officers for 1966. *Am Concrete Inst J* 63:sup 13 Ap '66

ACI Whitney award presented to University of Illinois. *Am Concrete Inst J* 63:sup3-5+ Je '66

Annual convention, 62d, Philadelphia, March 5-11; with program, abstracts of papers and list of exhibitors. *Am Concrete Inst J* 63:sup3+ F; sup3-27+ My '66

Annual report, 1965. *Am Concrete Inst J* 63:sup 1-3+ Ap '66

Fall meeting, 18th, Cleveland, Nov. 2-5; with abstracts of papers. *Am Concrete Inst J* 63:sup 13+ Ja '66

Fall meeting, New Orleans, Oct. 24-28; with program. *Am Concrete Inst J* 63:sup2-3+ O '66

Long-range activity planning. A. R. Anderson. *Am Concrete Inst J* 63:sup5-8 Ja '66

## AMERICAN electroplaters society

Annual convention, 53d, Miami Beach, June 19-23; with program, abstracts of papers and floor plans. *Plating* 53:623-32 103-22 My Ag '66; *Metal Finishing* 64:79-92 Je '66

Annual report. *Plating* 53:633-46 My '66

Constitution and bylaws. *Plating* 53:506-10 Ap '66

Financial report for the fiscal year July 1, 1965-June 30, 1966. *Plating* 53:1246-9 O '66

Quarterly research report. M. M. Beckwith. *Plating* 53:1011-12 Ag '66

Reports of 1965-66 board and committee chairmen and liaison representatives to other societies. *Plating* 53:800-3 Je '66

Research activities. W. Blum. *Plating* 53:341-53 Mr '66

Research report, July 1 to December 31, 1965. M. M. Beckwith. *Plating* 53:364-5 Mr '66



**AMERICAN foundrymens society**

Castings congress and exposition, Cleveland, May 9-13; with program, list of exhibitors and abstracts of papers, *Foundry* 94:170-87 My; 66-75+ Je; 104-5, 157+ J1 '66

**AMERICAN gas association**

Annual general management section conference, 12th, April 4-6, Washington, *Am Gas Assn Mo* 48:32-4 My '66

Annual meeting, 47th, Bal Harbour, Fla.; with texts of papers and list of officers and directors, *Am Gas Assn Mo* 47:2-14+ N '66

Annual meeting and exhibit, 48th, Atlantic City, N.J., Oct. 2-5; preview, *Am Gas Assn Mo* 48:2-11 J1-Ag '66; *Gas* 42:96-7 O '66

Annual sales executives conference, 2d, Chicago, Aug. 31-Sept. 1, *Am Gas Assn Mo* 48:28-31 O '66

Industrial-commercial gas sales conference, Houston, Texas, April 18-20; with program, *Am Gas Assn Mo* 48:34 Mr; 33-4 Je '66

Operating section distribution conference, Los Angeles, March 28-31, *Am Gas Assn Mo* 48:36-9 My '66

Operating sections final production conference, Baltimore, May 23-24, *Am Gas Assn Mo* 48:34-5 S '66

Purchasing and stores committee national conference, 1st, St Louis, March 9-11, *Am Gas Assn Mo* 48:43-4 Ap '66

Target for 1966, R. J. Rutherford, *Am Gas Assn Mo* 47:2-4 D '65

**AMERICAN institute of aeronautics and astronautics**

Aerospace sciences meeting, 3d, New York, Jan. 24-26, *Astronautics & Aeronautics* 4: 96-7 Mr; 80+ Je '66

AIAA third-year review, R. E. Horner, *Astronautics & Aeronautics* 4:84-5+ Mr '66

Who's who in technical committees, *Astronautics & Aeronautics* 4:118-24 My '66

**AMERICAN institute of architects**

ALA/AMA; or, blood-letting as practiced by the 20th century architect, *il Prog Arch* 47:166-9 F '66

Annual convention, 98th, Denver, June 26-July 1, *Arch Rec* 140:35-6+ Ag '66; *Eng N* 177:69-70 J1 7 '66; *Prog Arch* 47:61+ Ag '66

**AMERICAN institute of chemical engineers**

Annual meeting, 59th, Detroit, Dec. 4-8; with program, *Chem Eng Prog* 62:119-20+ O '66

National meeting, 58th, Dallas, Feb. 7-8; program, *Chem Eng Prog* 61:95-100 D '65

National meeting, 59th, Columbus, Ohio, May 15-19; with program, *Chem Eng Prog* 62: 114+ Mr '66

National meeting, 60th, Atlantic City, N.J., Sept. 18-21; with program, *Chem Eng Prog* 62:124-30 J1 '66

What should the institute do about pensions? R. I. Bergman, *Chem Eng Prog* 62:28-31 S '66

What's happening locally, H. C. Thorne, jr., *Chem Eng Prog* 62:50-7 F '66

**AMERICAN institute of mining, metallurgical and petroleum engineers**

AIIME officers, 1967, *Min Eng* 18:194-194F J1 '66

Annual fall meeting, 41st, Dallas, Oct. 2-5; with program and abstracts of papers, *J Pet Tech* 18:1085-91 S '66

Annual meeting, 95th, New York, February 27-March 3; program, *J Pet Tech* 18:58-9+ Ja '66

Annual report, 1965, *Min Eng* 18:77-84 Mr '66

Arizona's annual subsection meeting, *Eng & Min J* 167:96-7 Ja '66

Meeting, New York, February 27-March 3; program and abstracts of papers, *Min Eng* 17:35-50 D '65

**Society of mining engineers**

1966 membership directory, *Min Eng* 18:215+ J1 '66

Society of mining engineers and Rock Mountain miners conference coal sessions, Phoenix, Ariz., Oct. 7-9; abstracts of papers, *Coal Age* 70:106-9 N '65

**Coal division**

Meeting, New York, February 28-March 1; abstracts of papers, *Coal Age* 71:69-72 Ap '66

**Society of petroleum engineers**

Annual California regional meeting, 36th, Bakersfield, Nov. 4-5; program, *J Pet Tech* 17:1190-1 O '65

Job ahead; president's message, H. M. Krause, jr., *J Pet Tech* 18:138+ F '66

Value of AIIME to SPE, J. C. Calhoun, jr., *J Pet Tech* 17:1196-7 O '65

**AMERICAN institute of nutrition**

Annual meeting, 30th, Atlantic City, N.J., April 12-16; proceedings, *J Nutrition* 30: 101-14 S '66

**AMERICAN institute of physics**

Institute in 1965; a report on the annual report, *Phys Today* 19:45-8+ Mr '66

**AMERICAN institute of plant engineers**

Europe in '66 tour, H. E. B. Anderson, *il map Plant Eng* 20:170+ O '66 (to be cont)

**AMERICAN iron and steel institute**

General meeting, New York, May 25-26; address of the chairman, L. B. Worthington, *Iron & Steel Eng* 43:113-16 J1 '66

**AMERICAN medical association**

ALA/AMA; or, blood-letting as practiced by the 20th-century architect, *il Prog Arch* 47:166-9 F '66

**AMERICAN mining congress**

Annual membership meeting, Washington, Jan. 10-11, *Min Cong J* 52:30-1+ F '66

Coal convention, Pittsburgh, May 8-11; with abstracts of papers, *Coal Age* 71:102-8 Je '66; *Min Cong J* 52:40-5 Ap; 56-67 Je '66

Convention and equipment show, Las Vegas, *il Eng & Min J* 166:97-101+ N '65

Convention and show, Las Vegas, Oct. 11-14; with abstracts of papers, *Fit & Quarry* 58: 122-4+ D '65

Convention, Salt Lake City; with abstracts of papers, *Eng & Min J* 167:99-102 O '66

Metal mining and industrial minerals convention, Salt Lake City, Sept. 11-14; with program, *Min Cong J* 52:37-48 Ag '66

Mining show convention and exposition, Las Vegas, *Min Cong J* 51:58-64 N '65

**AMERICAN museum of photography**

American museum of photography twenty-fifth anniversary celebration is occasion for opening of photography Hall of fame, *il Ind Phot* 15:24+ Ja '66

**AMERICAN nuclear society**

Report on nuclear power sessions in APC and ANS, *bibliog Power Eng* 70:70-2 S '66

Winter meeting, Pittsburgh, Pa., Oct. 31-Nov. 3; program preview, *Nucleonics* 24:66B-66D O '66

**AMERICAN oil chemists society**

Advancements create new challenge; report of the president 1965-66, *Am Oil Chem Soc J* 43:sup213A My '66

Annual meeting, 57th, Los Angeles, April 24-27; with program and abstracts of papers, *Am Oil Chem Soc J* 43:sup86A+, 248A+ Mr, Je '66

Annual report of the Smalley committee, 48th, *Am Oil Chem Soc J* 43:sup287A+ Je '66

Detergent session; annual meeting, 57th, Los Angeles, April 24-27; abstracts of papers, *Soap & Chem Spec* 42:63+ Ap '66

East Lansing short course, Aug. 29-Sept 1; abstracts of papers, *Am Oil Chem Soc J* 43:sup306A+ J1 '66

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API takes major role in statistics, *Oil & Gas J* 64:34 My 30 '66

Annual meeting, 45th, Chicago, *Oil and Gas J* 63:67-9 N 8; 107-24 N 15 '65

**AMERICAN physical society**

Joint annual meeting with American association of physics teachers, New York, Jan. 26-29; preview and list of exhibitors, *Phys Today* 19:79-92 Ja '66

Southeastern section meeting, 32d, Nov. 1-3; with abstracts of papers, *Am J Phys* 34: 282-5 Mr '66

**AMERICAN power conference**

Annual meeting, 28th, Chicago, April 26-28; abstracts of papers, *Combustion* 37:24-9+ Je; 38:13, 38-41 J1; 40-50 Ag '66

Annual meeting, 28th, Chicago, April 26-28; program, *Power Eng* 70:48-9 Mr '66; *Combustion* 37:46-51 Ap '66

Meeting, Chicago, April 26-28; abstracts of papers, *Mech Eng* 88:98-9 J1 '66

Meeting, 1966; abstracts of papers on station design, practice, *Power Eng* 70:49-51 J1 '66

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Annual meeting, 64th, Denver. Eng N 176:14 Mr 3 '66; Civil Eng 36:78 Ap '66
- AMERICAN society for clinical nutrition**  
Annual meeting, 6th, Atlantic City, April 30; program and abstracts of papers. Am J Clinical Nutrition 18:301-16 Ap '66  
Presidential address. C. S. Davidson. Am J Clinical Nutrition 18:469-70 Je '66
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Annual meeting, 74th, Pullman, Wash. June 20-24. Civil Eng 36:79 Ag '66; Mech Eng 88:69-70 Ag '66  
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ASQC history, 1916-1966. Ind Quality Control 22:566-85 My '66  
Annual technical conference and exhibit, 20th, New York, June 1-3; program and list of exhibitors. Ind Quality Control 22:597-9+ My '66  
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1966-67 organization manual. Ind Quality Control 23:127-34 S '66
- AMERICAN society for testing and materials**  
Annual meeting and 17th biennial materials testing exhibit, Atlantic City, N.J. June 27-July 1; program and list of exhibitors. Materials Res & Stand 6:245-50+, 312-13 My-Je '66  
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Committee D-11 on rubber and rubberlike materials meeting, Atlantic City, June 26-July 1. Rubber Age 98:91-3 Ag '66  
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Annual meeting and transportation engineering conference, Philadelphia, Oct. 17-21; program. Civil Eng 36:65-73 Ag '66  
Environmental engineering conference, Kansas City, Oct. 18-22; with abstracts of papers. Civil Eng 35:56-63 N '65  
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Structural engineering conference, Miami Beach, Jan. 31-Feb. 4; program. Civil Eng 35:89-98 N '65  
Water resources engineering conference, Denver, May 16-20; program. Civil Eng 36:75-85 Mr '66
- AMERICAN society of heating, refrigerating and air-conditioning engineers**  
ASHRAE officers, directors, committeemen. ASHRAE J 8:96-7 My '66  
Annual meeting, 73d, Toronto, June 27-29; program and abstracts of papers. ASHRAE J 8:39-53 Je '66  
Our by-laws; the members' safeguard. ASHRAE J 8:56-7 O '66  
Semiannual meeting, Houston, Tex. Jan. 24-27; abstracts of papers. Heating-Piping 38:110-13 Mr '66  
Semi-annual meeting, Houston, Tex. Jan. 24-27; with program and abstracts of papers. ASHRAE J 8:69-95 Ja; 48-67 Mr '66  
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- AMERICAN society of mechanical engineers**  
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- AMERICAN society of perfumers**  
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**AMERICAN society of tool and manufacturing engineers—Continued**

- Engineering conference and tool exposition, Detroit, April 18-22; program and products on display, *Iron Age* 197:83+ Ap 7 '66
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See also

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See also

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- Airport buildings  
 Balconies  
 Bandstands  
 Bathhouses  
 Beach architecture  
 Building materials  
 Buildings  
 Cathedrals  
 Ceilings  
 Church architecture  
 Clinics  
 Clubhouses  
 College architecture  
 Community centers  
 Concrete construction  
 Convents  
 Department stores  
 Embassy buildings  
 Exhibition buildings  
 Factories  
 Greenhouses  
 Hillside architecture  
 Interior decoration  
 Library buildings  
 Medical buildings  
 Modular coordination (architecture)  
 Monuments  
 Moving picture theaters  
 Municipal centers  
 Mural painting and decoration  
 Museums  
 Music halls  
 Naval architecture  
 Nursing homes  
 Office buildings  
 Partitions  
 Pavilions  
 Planetariums  
 Police stations  
 Recreation buildings  
 Remodeling (architecture)  
 Sculpture, Architectural  
 Skis and skiing—Stations, lodges, etc.  
 Stadiums  
 Store buildings  
 Studios  
 Telephone company buildings  
 Tennis courts, Indoor  
 Theaters  
 Zoological gardens—Buildings  
 also subdivision Architecture under names of cities, e.g.

- Akron, Ohio  
 Atlanta  
 Barcelona  
 Berlin  
 Boston  
 Chicago  
 Columbus, Indiana  
 Dallas  
 Denver  
 Detroit  
 Durham, North Carolina  
 Hartford, Connecticut  
 Helsinki  
 Honolulu  
 Indianapolis  
 Johannesburg  
 Liverpool, England  
 London  
 Los Angeles  
 Madrid  
 Memphis, Tennessee  
 Minneapolis  
 Montreal  
 New Haven, Connecticut  
 New York (city)  
 Norfolk, Virginia  
 Paris  
 Philadelphia  
 Pittsburgh  
 Portland, Oregon  
 St. Louis  
 San Francisco  
 Sydney, Australia  
 Tokyo  
 Toronto  
 Trenton, New Jersey  
 Venice  
 Washington, D.C.

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## Japan

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Balconies

Country houses

Fireplaces

Hillside architecture

Interior decoration

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Electric utilities  
Geology  
Irrigation  
Mines and mineral resources  
Paleoclimatology  
Physical geography

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Hydroelectric plants  
Labor supply  
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Furnaces, Brazing  
Silver solder  
Solder and soldering

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**BRICK handling**

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- Pliable clamp jaws grip bricks. *il diag Engineering* 200:818 D 24 '65

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- Power industry chimneys; brickwork lining performance. R. R. Pierce and D. J. Kosler. *il Combustion* 35:21-30 S '66

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- Mechanization of pugging processes. J. H. Connor. *diags Am Cer Soc Bul* 45:183-6 F '66

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**Efflorescence**

- Discoloration of mortar joints by manganese-colored brick. P. J. Bebbington and others. *bibliog il Am Cer Soc Bul* 45:271-6 Mr '66

**Testing**

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- Bridge approaches in Florida: unit prices. *Eng N* 175:52 N 11 '65

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- Bridge has five steel design. *diags Roads & Sts* 109:71 Mr '66
- Design of concrete multibeam bridge decks. A. R. Cusens and R. P. Pama. *bibliog il diags Am Soc C E Proc* 91 [ST 5 no 4518]:255-78 O '65; Discussion. 92 [ST 4 no 4871]:79-86 Ag '66
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- Slender Severn suspension bridge. *il map diags Engineering* 202:419-56 S 9 '66
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Charleston, South Carolina  
Cologne, Germany  
Detroit  
Lisbon  
Montreal  
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Iowa; unit prices. Eng N 175:55 N 4 '65  
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- Dislodged bridge girders are safely repositioned. *il Eng N 176:18-19 Ap 14 '66*
- Epochal bridge starts deep under water; Narragansett Bay, Newport bridge. *il map diags Eng N 177:22-4+ Ag 25 '66*
- Grouting manmade islands; Chesapeake Bay bridge. B. J. Prugh. *il plan diags Am Soc C E Proc 92 [CO 1 no 4621]:37-51 Ja '66*
- Long caissons support an overpass. *il Eng N 177:115-16 J1 '66*
- Safety scaffolding aids pier work. *il Roads & Sts 108:70 N '65*
- Single-column piers will carry a double-decked expressway in Tokyo. *il Eng N 176:105 Ap 7 '66*
- Tagus River bridge; tower piers. L. W. Riggs. *il diags Civil Eng 36:41-5 F '66*
- Verrazano-Narrows bridge; construction of tower foundations and anchorages. N. Gray and H. G. Decanecq. *il plan diags Am Soc C E Proc 92 [CO 2 no 4744]:95-117 Mr '66; Discussion. B. J. Prugh. 92 [CO 3 no 4889]:88 S '66*
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**Lighting**

- Bridge safety is not accidental; special luminaires installed atop median barrier structures of six-lane bridge. H. P. Scott. *il diags Elec Constr & Maint 65:115-20 O '66*
- Ribbon of light for a new bridge. J. R. Walker and N. Hilton. *il Illum Eng 61:311-13 sec 2 Ap '66*

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- Dislodged bridge girders are safely repositioned. *il Eng N 176:18-19 Ap 14 '66*
- Putting a movable bridge span back in swing. R. P. Papp. *il diags Civil Eng 36:36-9 J1 '66*
- Replacement of suspender ropes on George Washington bridge. H. A. Druding. *il diags Civil Eng 36:56-8 J1 '66*
- Scows lift smashed swing span for repairs. *il Eng N 176:30-2 Ap 28 '66*
- Suspended ropes on George Washington bridge pass rigid tests but need maintenance. I. P. Gould. *il diags Civil Eng 36:52-5 J1 '66*
- Upkeeping an American showpiece. R. L. Moxey. *il Comp Air Mag 71:4-9 Ag '66*
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**Model testing**

- Suspension bridge model gets excited. *il Eng N 177:105 Ag 11 '66*

**Reconstruction**

- Computer aids in rehabilitation of world's widest bridge. H. Rosenblatt. *il plans Pub Works 97:70-2 F '66*
- Japanese bridge uses ductile iron castings. T. Fujita. *il Foundry 94:121+ S '66*

**Stresses**

- Use of influence surfaces in assessing moments and stresses in short span bridges subjected to abnormally heavy loads. A. M. Lansdown. *bibliog diags Eng J 49:18-21 Je '66; Discussion. 49:41-2 Ag '66*

**Tolls**

- Keeping tolls recording and computing equipment on-line. R. A. Hauslen. *il diags ISA J 13:37-41 Mr '66*

**Vibration**

- Vibration measurements on a modern steel bridge. H. S. Ward. *il diags Eng J 49:15-19 S '66*

**Welding operations**

- Mobile units give firm highly mechanized production. *il Welding Eng 51:77-8 J1 '66*
- No maintenance for Ohio bridges. *il diag Welding Eng 5:54 Mr '66*
- Over 1300 welded girders used for Detroit's new Fisher expressway bridge. *il Welding J 45:424-5 My '66*
- Welded steel bridge outbids concrete, meets 36-hr time limit. *il Welding Eng 51:94+ Ap '66*
- Welded steel girders selected for a major bridge after comparative study. E. A. Stratton and K. K. Chen. *il diag Civil Eng 36:56-9 F '66*

- Welded studs skidproof bridges. *il Eng N 176:39 Je 2 '66*
- Welding again featured in prize bridges. *il Welding Eng 51:97 My '66*

**Widening**

- Wings widen Auckland harbor bridge. *il diag Eng N 176:37 Ap 21 '66*

**Wrecking**

- Bridge demolition at Oroville dam. *il plans diags Civil Eng 36:32-3 Ap '66*

**Austria**

- Concrete boxes form Austrian bridge. *il Eng N 177:122 J1 7 '66*
- Steel rib cage moves form for elevated Austrian road. *il diags Eng N 176:30-1 Ap 14 '66*

**Chile**

- Bio-Bio and Maipo bridges. Chile. Engineer 221:281 F 18 '66

**Japan**

- Linking Japanese islands fulfills an old wish. *il diag Eng N 177:146-7 O 13 '66*

**Lebanon**

- Arch span sets Lebanese record. *il Eng N 177:121 J1 7 '66*

**Luxembourg**

- Grand Duchess Charlotte bridge in Luxembourg. *il Engineer 221:370-1 Mr 4 '66*

**Netherlands**

- Long concrete cantilevers stretch three miles across a Dutch estuary. *il map Eng N 175:34-6 D 23 '65*
- Three miles over water in prestressed concrete. *il Engineering 200:723 D 3 '65*

- BRIDGES (instruments). See Electric instruments; Wheatstone bridge; Wien bridge

**BRIDGES, Aluminum**

- 20 year old aluminum bridge; Arvida road bridge in Quebec, Canada. *il Engineering 201:427 Mr 4 '66*

**BRIDGES, Arched**

- Arch span sets Lebanese record. *il Eng N 177:121 J1 7 '66*
- Czechs cantilever record hinged arch. *il Eng N 176:33-4 Mr 24 '66*
- Hand labor in Afghanistan builds masonry arch bridge, completed in two months. *il Eng N 176:28 Mr 24 '66*
- Portland chooses tied-arch orthotropic bridge as dark horse takes beauty contest. *diag Eng N 175:71 N 18 '65*
- Utah fixes a hinged-arch river span. *il Eng N 175:18 D 2 '65*

**BRIDGES, Bascule**

- Brake for a hydraulically actuated bridge. E. F. Allen. *il diag Hydraulics & Pneumatics 19:84-6 F '66*

**BRIDGES, Cantilever**

- Bridge has five steel design. *diags Roads & Sts 109:71 Mr '66*
- Continuing the Severn crossing: the Wye viaduct. *il diags Engineering 202:499-504 S 16 '66*
- Stress analysis of cantilevered bridge slabs. A. Coull. *diags Am Soc C E Proc 92 [ST 2 no 4765]:1-18 Ap '66*

**BRIDGES, Concrete**

- Arch span sets Lebanese record. *il Eng N 177:121 J1 7 '66*
- Austrians minimize falsework on elevated highway. *il Eng N 176:36-7 Je 9 '66*
- Bio-Bio and Maipo bridges. Chile. Engineer 221:281 F 18 '66
- Bridge combines concreting techniques. *il Eng N 176:125-6 Ap 7 '66*
- Bridge esthetics preserve scenic highway. *il Eng N 177:28-9 S 1 '66*
- Bridge girders blend steel and concrete. *il Eng N 176:126+ Ap 7 '66*
- Bridge to higher education at Fairleigh Dickinson university. A. G. Lichtenstein. *il Pub Works 97:97-3 F '66*
- Cascade Orchards bridge. A. Grant. *il diags Civil Eng 36:62-4 Ag '66*
- Collars support bridge forms. *il Eng N 177:41 J1 21 '66*
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- Cracking columns afflict viaduct. *Eng N 176:78 Je 16 '66*
- Design of concrete multihaem bridge decks. A. R. Cusens and R. P. Pama. *bibliog il diags Am Soc C E Proc 91 [ST 5 no 4518]:255-78 O '65; Discussion. 92 [ST 4 no 4871]:79-86 Ag '66*
- Europe's longest bridge opened in Holland. *il Am Concrete Inst J 63:sup27-9 J1 '66*

**BRIDGES, Concrete—Continued**

- Grace and style mark Sacramento freeways. *Il plan Eng N 177:20-2 O 5 '66*
- Haste makes waste; failure to follow plans. charged in bent shifting. *Eng N 177:16 JI 14 '66*
- Long concrete cantilevers stretch three miles across a Dutch estuary. *Il map Eng N 175:34-6 D 23 '65*
- Low-cost permanent bridges for county roads. H. R. Anderson. *diags Pub Works 97:86-7 Ag '65*
- Now open; Scotland's Tay road bridge. *Il Engineering 202:312 Ag 19 '66*
- Oakland overpass; a beginning. *Il Prog Arch 47:220-1 Ap '66*
- Oléron bridge construction. *Il Engineer 221:335 F 25 '66*
- Precast box beams form elevated roadway. *Il Eng N 177:36-7+ S 29 '66*
- Second longest prestressed span: Greyfriars bridge, Hereford. *Il Engineering 202:360 Ag 26 '66*
- Steel frame erects Ghana bridge. *Il diags Eng N 177:148-9 O 13 '66*
- Steel rib cage moves form for elevated Austrian road. *Il diags Eng N 176:30-1 Ap 14 '66*
- Sudan bridge sits in Nile silt. *Il Eng N 177:164+ S 15 '66*
- Three miles over water in prestressed concrete. *Il Engineering 200:728 D 3 '65*
- Tunnel-falsework complex moves to build parallel overpasses. *Il Eng N 177:32-3 JI 28 '66*
- Unusual case of surface deterioration on a concrete bridge deck. J. Ryell. *bibliog Il Am Concrete Inst J 62:421-2 Ag '65; Discussion, 62:1625-7 D '65*
- Wide bridge spans the Rouge River at Detroit. *Il diag Eng N 176:26-7 Ja 20 '66*

**Testing**

- Stressing prestressed bridges. *Engineering 202:417 S 2 '66*
- Use of high strength reinforcing steel in bridges. E. L. Hardeman. *Il diags Am Concrete Inst J 62:457-66 Ap '65; Discussion, 62:1633-6 D '65*
- BRIDGES, Foot**
- Bridge to higher education at Fairleigh Dickinson university. A. G. Lichtenstein. *Il Pub Works 97:97-8 F '66*
- Prefabricated steel pedestrian bridges. *Il Engineering 200:728 D 3 '65*
- Sub-arc fabricates reversed curve box girder for overpass. *Il diags Welding Eng 51:76-7 F '66*

**BRIDGES, Iron and steel**

- Begin orthotropic bridge erection; San Mateo-Hayward bridge. *Il Eng N 175:25 N 11 '65*
- Big girder closes interstate gap. *Il Eng N 178:35 Ag 4 '66*
- Box girders conquer the Rhine. *Il diags Eng N 176:61-2+ F 17 '66*
- Bridge girders blend steel and concrete. *Il Eng N 176:126+ Ap 7 '66*
- Bridge has five steel design. *diags Roads & Sts 109:71 Mr '66*
- Concordia orthotropic bridge; fabrication and erection. R. J. Gill and S. Dozzi. *Il diags Eng J 49:10-18 My '66*
- Czechs cantilever record hinged arch. *Il Eng N 176:33-4 Mr 24 '66*
- East-West Nigerian bridge open. *Il Eng N 176:115 Ap 7 '66*
- Erection of the Wye viaduct. *Il diag Engineer 221:888-91 Je 10 '66*
- Expression in structural steel: abstracts of papers. *Il Engineering 202:676-80 O 14 '66*
- Fire destroys steel truss span. *Il Eng N 176:19 Ap 28 '66*
- For San Diego; orthotropic span. *Eng N 176:18 Ap 21 '66*
- Galvanizing safeguards Detroit garage and protects Michigan bridge. *Il Eng N 175:120+ N 18 '65*
- Grand Duchess Charlotte bridge in Luxembourg. *Il Engineer 221:370-1 Mr 4 '66*
- Highline minimizes falsework to erect girders on high bridge. *Il diags Eng N 177:26-8 Ag 18 '66*
- New and old bridges; alike but different; Cooper River bridges, Charleston, S.C. *Il diag Eng N 175:90-3 N 18 '65*
- Over 1300 welded girders used for Detroit's new Fisher expressway bridge. *Il Welding J 45:424-5 My '66*
- Poplar Street bridge; design and fabrication. E. J. Shields. *Il diags Civil Eng 36:52-5 F '66*
- Portland chooses tied-arch orthotropic bridge as dark horse takes beauty contest. *diag Eng N 176:71 N 18 '65*

- Prefab bridge minimizes down time. *Il Pub Works 97:111-12 Ap '66*
- Prefabricated steel pedestrian bridges. *Il Engineering 200:728 D 3 '65*
- Report on the bridge failure at Clapham Junction. *Engineer 220:895-6 N 26 '65*
- Researchers seek surface course for orthotropic deck. *Il Eng N 175:34-7 N 25 '65*
- San Mateo-Hayward bridge; a contractor's dream. *Il Eng N 176:22-3+ Je 23 '66*
- Second Cooper River bridge hears completion. *Il Civil Eng 35:113 N '65*
- Steel bridge design competition announced. *Il Roads & Sts 108:71 N '65*
- Steel erection forges ahead on major U.S. orthotropic bridge. *Il diags Eng N 177:22-4 O 20 '66*
- That signal bridge; why it rusted away. *Il Engineering 200:678-9 N 26 '65*
- Utah fixes a hinged-arch river span. *Il Eng N 175:18 D 2 '65*
- Vibration measurements on a modern steel bridge. H. S. Ward. *Il diags Eng J 49:15-19 S '66*
- Welded steel boxes assembled on site for Britain's Wye bridge. *Il diag Eng N 177:26-7+ JI 21 '66*
- Welded steel bridge outbids concrete, meets 36-hr time limit. *Il Welding Eng 51:94+ Ap '66*
- Welded steel girders selected for a major bridge after a comparative study. E. A. Stratton and K. K. Chen. *Il diag Civil Eng 36:56-9 F '66*
- Welding again featured in prize bridges. *Il Welding Eng 51:97 My '66*

**BRIDGES, Lift**

- Virginia vertical lift span goes in. *Il Eng N 177:23 S 22 '66*

**See also**

- Bridges, Bascule**
- BRIDGES, Movable**
- Freighter smashes swing span. *Il Eng N 176:19 Mr 10 '66*
- Putting a movable bridge span back in swing. R. P. Papp. *Il diags Civil Eng 36:36-9 JI '66*
- Scows lift smashed swing span for repairs. *Il Eng N 176:30-2 Ap 28 '66*
- BRIDGES, Pedestrian. See Bridges, Foot**
- BRIDGES, Prefabricated**
- Prefab bridge minimizes down time. *Il Pub Works 97:111-12 Ap '66*

**BRIDGES, Railroad**

- India builds vital rail bridge. *Il Eng N 176:153 Je 16 '66*

**BRIDGES, Steel. See Bridges, Iron and steel****BRIDGES, Stone**

- Hand labor in Afghanistan builds masonry arch bridge, completed in two months. *Il Eng N 176:28 Mr 24 '66*

**BRIDGES, Suspension**

- Aluminium alloy replaces wrought iron. *Il Metallurgia 73:123 Mr '66*
- Bethlehem bids a winning bridge over Narragansett Bay. *Il Eng N 176:20 Ap 25 '66*
- Britain opens the Severn bridge. *Il Eng N 177:14 S 1 '66*
- Can the old spinning wheel retire? *Il Eng N 175:15-16 N 25 '65*
- Danish bridge will be big and beautiful. *Il diags Eng N 176:116+ Ap 7 '66*
- Epochal bridge starts deep under water; Narragansett Bay, Newport bridge. *Il map diags Eng N 177:22-4+ Ag 25 '66*
- Good-bye cable maintenance: polyethylene, nylon, and glass-reinforced acrylic keep suspension bridges dressed up. *Il diag Mod Plastics 43:89+ Je '66*
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Balconies  
Bracing  
Brick construction  
Building materials  
Ceilings  
Chimneys  
College architecture  
Columns  
Concrete construction

**BUILDING--See also--Continued**

Concrete houses  
Construction equipment  
Contractors  
Earthquakes and building  
Fireproof construction  
Foundation soils  
Foundations  
Framing (building)  
Hot water supply  
Masonry  
Mechanical equipment of buildings  
Paneling  
Partitions  
Piles and pile driving  
Public works  
Roofs  
Shipbuilding  
Shoring and underpinning  
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Masonry

Mastics (asphalt composition, etc.)

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Fertilizer industry  
Gas. Natural  
Gas. Natural—Pipe lines  
Gas industry  
Geology  
Hydroelectric plants

Income tax  
Iron industry and trade  
Iron ores  
Metal trade  
Mineral industries  
Mining industry and finance  
Mining law  
Nickel mines and mining  
Paint industry and trade  
Paper industry and trade  
Petroleum  
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Petroleum supply  
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Die casting machines

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Molds (for casting)

Steel castings

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Clay  
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Mineralogical analysis  
Phosphorimetry  
Plants—Chemical analysis  
Precipitation (chemistry)  
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Pottery

**CLAY products**

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Pottery

Sanitary ware

Tiles

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Boiler cleaning  
Cleaning machinery  
Cotton cleaning  
Dyes and dyeing  
Metal cleaning  
Shot blasting  
*also* subdivision Cleaning under special subjects, e.g.  
Automobiles  
Belting, Conveyor  
Castings  
Chemical plants  
Electric equipment  
Electronic apparatus and instruments  
Factories  
Food factories  
Heat exchangers  
Lighting fixtures  
Motor trucks  
Pipes  
Reservoirs  
Roads  
Street lighting fixtures

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Shampoos  
Solvents  
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Clay  
Coal mines and mining  
Earthquakes  
Electric plants (central stations)  
Floods  
Gas, Natural  
Geology  
Hydroelectric plants  
Lead mines and mining  
Mines and mineral resources  
Molybdenum mines and mining  
Paleontology  
Petroleum  
Petroleum industry and trade  
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Flash point  
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Feedback control systems  
Governors (machinery)  
Hydraulic control  
Liquid level control  
Machinery, Automatic  
Magnetic control  
Numerical control  
Pneumatic control  
Servomechanisms  
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Temperature—Regulation  
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Air compressors  
Air conditioning equipment  
Airplanes  
Bakers and bakeries  
Boilers  
Cement plants  
Chemical plants  
Concrete plants  
Cranes, derricks, etc.  
Crushing machinery  
Cupola furnaces  
Electric plants (central stations)  
Elevators  
Feeders  
Gas burners  
Gas turbines  
Guided missiles  
Heat exchangers  
Helicopters  
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Machine tools  
Machinery  
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Milling machines  
Nailing machines  
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Cooling water

Quenching

Shrinkage of metals

Steel, Quenching of

*also* subdivision Cooling under special subjects, e.g.

Airplanes, Supersonic

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**Inclusions**

See Inclusions (mineralogy and petrology)

**Lattices**

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Water purification—Demineralization

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See Store buildings—Air conditioning

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Depiction  
Obsolescence

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Death Valley, California

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See also

Human engineering  
Modular coordination (architecture)

Structures, Theory of

Textile design

also subdivision Design under special subjects, e.g.

Airplanes

Airplanes, Military

Airplanes, Supersonic

Ammeters

Amplifiers

Atomic power plants

Automobile engines

Automobiles

Bearings

Chemical plants

Concrete construction

Cranes, derricks, etc.

Diesel engines

Electric plants (central stations)

Electric transformers

Electronic circuits

Freight cars

Heat exchangers

Internal combustion engines

Machine tools

Machinery

Paper and pulp mills

Power plants

Pressure vessels

Structural engineering

Tractors, Farm

Voltmeters

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Training 1970's design engineer: special report. *bibliog il Mech Eng* 83:16-25 My '66

#### DESIGN engineering conference

ASME conference and show, Chicago, May 9-12; abstracts of papers and products on display. *Steel* 158:90-1, 151-6+ My 2 '66

ASME Design engineering conference and show, Chicago, May 9-12; preview. *il Automotive Ind* 134:75-7+ My 1 '66

ASME Design engineering conference and show, Chicago, May 9-12; program, list of exhibitors, products on display, abstracts of papers and list of technical papers available. *Mech Eng* 88:28-46+ My; 88-90, 136 JI; 48-50 Ag '66

**DESIGN engineering conference—Continued**

ASME Design engineering show and conference, Chicago, May 9-12; program and products on display. *Il Iron Age* 197:94+, 110+ Ap '66

Design engineering show and conference, Chicago, May 9-12; program, floor plan, products on display, and list of exhibitors. *Machine Design* 38:221-52 Ap '66; *Machinery* 19:107-8+ Ap '66; *Product Eng* 37:97-301 My '66

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Desmosterol in developing rat brain. D. Kritchevsky and others. bibliog *Am Oil Chem Soc J* 42:1024-8 D '65

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Busbars

Electric cables

Electric distribution

Electric transmission

Insulation (electric)

Semiconductors

Skin effect

Solenoids

Wave guides

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Electric distribution

Electric wiring

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Electric plants (central station)—Control equipment  
Electric switchgear  
Electrohydraulic control  
Electronic control  
Radio control  
Selsyn apparatus  
Servomechanisms  
Switchboards  
Thyratron  
Valves—Electric control  
Voltage regulation  
    also subdivisions Control and Control uses  
    under special subjects, e.g.  
Airplanes  
Electric heating  
Electric motors  
Electric motors, Alternating current  
Electric motors, Direct current  
Electric motors, Induction  
Gas turbines  
Machine tools  
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Electric cables  
Electric capacitors  
Electric circuit breakers  
Electric conductors  
Electric conduits  
Electric currents  
Electric fuses  
Electric lines  
Electric plants—Interconnection  
Electric rectifiers  
Electric service, Rural—Cooperative lines  
Electric substations  
Electric switchgear  
Electric transformers  
Electric transmission  
Electric wiring  
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Voltage  
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Electric motors  
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Electric driving  
Electric heating  
Electric machinery  
Electric measurements  
Electric motors  
Electric transmission  
Electric wiring  
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 Electric control  
 Electric driving  
 Electric heating elements  
 Electric plants (central stations)—Equipment  
 Electric switchgear  
 Electric transmission  
 Electricity in mining  
 Electricity on the farm  
 Switchboards

*also* subdivision Electric equipment under special subjects, e.g.

Airplanes  
 Airports  
 Apartment houses  
 Automobiles  
 Cars  
 Chemical plants  
 Coal mines and mining  
 College buildings  
 Cranes, derricks, etc.  
 Factories  
 Food factories  
 Hospitals  
 Laboratories  
 Metal working plants  
 Motels  
 Municipal buildings  
 Office buildings  
 Office buildings, Industrial  
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 Interlocking devices

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Electrolytic cells

Electroplating

Smelting, Electric

*also subdivision Electrometallurgy under special subjects, e.g.*

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Supervisory workers  
Trade secrets  
also subdivision Employees under special subjects, e.g.  
Atomic power plants  
Electric utilities  
Gas companies  
Highway departments  
Hospitals  
Oil companies  
Paint shops  
Paper and pulp mills  
Petroleum refineries  
Plumbing shops  
Printing offices  
Rock products plants  
Rubber factories  
Sewage disposal plants  
Steam plants  
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  - County engineering
  - Curves
  - Dams
  - Drilling and boring (earth and rocks)
  - Electric engineering
  - Engineers
  - Grouting
  - Highway engineering
  - Hydraulic engineering
  - Lighting
  - Marine engineering
  - Mechanical engineering
  - Mechanics
  - Military engineering
  - Mining engineering
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- Atomic power
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- Automobiles
- Chemical industries
- Control equipment
- Electric apparatus and appliances, Domestic
- Electronic apparatus and instruments
- Foundry machinery
- Gas industry
- Heating equipment
- Household products
- Instruments
- Machine tools
- Machinery
- Mechanical handling
- Motor buses
- Motor trucks
- Office appliances
- Packaging
- Petroleum industry and trade
- Photographic supplies industry
- Physical apparatus and instruments
- Radio apparatus
- Refrigeration and refrigerating machinery
- Rock products industry

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Detonation  
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See also  
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Retina  
Sight

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Automobile factories

Cement plants

Chemical plants

Drug factories

Factory management

Food factories

Foundries

Glass factories

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**Factories—Equipment—See also—Continued**

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Control boards

Control charts

Efficiency. Industrial

Employees

Employment management

Employment systems

Engineering departments

Factories—Cleaning

Factories—Maintenance and repair

Factory costs

Foremen

Hygiene. Industrial

Industrial engineering

Industrial management

Industrial relations

Inspection

Inventories

Job work

Material handling

Mechanical handling

Medical service. Industrial

Music in industry

Office management

Organization in industry

**FACTORY management**—See also—*Continued*

Packing for shipment  
 Photographic departments  
 Planning  
 Production  
 Production control  
 Purchasing  
 Research departments  
 Routing systems  
 Safety devices and measures  
 Schedules  
 Shipping departments  
 Standardization  
 Stores systems  
 Tool rooms  
 Vacations  
 Visitors

also subdivision Management under special subjects, e.g.

Airplane factories  
 Chemical plants  
 Food factories  
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 Dust removal  
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See also  
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 Electric trucks, Industrial  
 Material handling  
 Mechanical handling  
 Motor trucks, Industrial  
 Pallets  
 Tractors, Industrial  
 Trucks

**FACTORY yards.** See **Factories—Yards**

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See also

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Membranes  
Oil films

FILMS, Magnetic. See Films, Metallic

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- Building
- Chemical industries
- Colleges and universities
- Electronics industry
- Gas companies
- Gas industry
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- Petroleum industry and trade
- Rapid transit
- Roads
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- Sewerage
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Fire protection

Sprinkling systems

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Coal mines and mining—Fires and fire protection

Fire extinguishers

Fire service (water supply)

Sprinkling systems

**FIRE extinguishers**

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Detectors

Fire apparatus

Fire departments

Fire extinction

Fire extinguishers

Fire service (water supply)

Fireproof construction

Fireproofing of textiles

Inflammable liquids

Inflammable mixtures

National fire protection association

Sprinkling systems

also subdivision Fires and fire protection under special subjects, e.g.

Airports

Coal mines and mining

Electric plants (central stations)

Gas. Natural

Hospitals

Oil tanks

Paint shops

Petroleum industry and trade

Petroleum refineries

Power plants

Printing offices

Tank ships



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Plastics—Fire resistance

Refractory materials

Silicones

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**See also**

Sprinkling systems

**FIREARMS****See also**

Guns

Machine guns

Rifles

Shotguns

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Bakers and bakeries

Baking

Cake

Diet

Digestion

Fish as food

Flavor

Food, Dietetic

Food industry nad trade

Food poisoning

Food preservation

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Infants food

Nutrition

Rice

Shortening

Space flight—Food problems

Sweetening agents

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Browning

**Insect infestation**

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Flour beetles

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Fish as food—Spoilage

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Fruit—Storage

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Poultry, Frozen

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Fish processing plants

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Poultry processing plants

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**Design**

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Trained specialists install and maintain medium-voltage cable: Quaker oats co. E. R. Smith. il Plant Eng 20:136-9 F '66

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- Work simplification updates old plant. J. V. Ziemba. *il diag Food Eng* 38:62-4+ Ap '66

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Food, Frozen

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**International aspects**

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Foundation soils  
Piers (foundations)  
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Foundry machinery  
Furnaces, Iron founding  
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 Castings--Cleaning  
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**FRACTIONATOR**. See **Distillation apparatus**

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Boilers—Firing

Coal

Coke

Gas, Natural

Gas as fuel

Liquid fuel

Oil fuel

Propellants

Waste fuel

also subdivision Fuel under special subjects, e.g.

Airplane engines

Automobile engines

Blast furnaces

Diesel engines

Electric plants (central stations)

Gas turbines

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*See also*

Electric furnaces, Annealing

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*See also*

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*See* Boilers—Protection

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*See also*

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*See also*

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 Electric furnaces, Iron founding

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*See also*

Electric furnaces, Laboratory

**Control**

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*See also*

Blast furnaces  
 Open hearth furnaces

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*See also*

Electric furnaces, Steel making  
 Furnaces, Heating  
 Open hearth furnaces  
 Open hearth process



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**Manufacture**

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**Painting and finishing**

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Vacuum gages

**Manufacture**

- Coating lowers cost of precision gages. *Prod-*  
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wasting for both the gage and part de-  
signer. A. J. Fitzgerald. *il* *diag* Tool &  
Manuf Eng 57:60-1 O '66

**Testing**

- Gage block comparator splits millionths. F.  
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- Air gauging with one probe. *diag* Engineer-  
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  - Aerodynamics
  - Air
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  - Furnaces. Carburizing—Atmosphere control
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  - Gas analysis
  - Glass—Gas content
  - Helium
  - Hydrogen
  - Inflammable mixtures
  - Ionization. Gaseous



**GASES—See also—Continued**

Methane  
Nitrogen  
Oxygen  
Propane  
Vapor pressure  
Vaporization  
Vapors

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Gas compressors  
Manometers  
Scrubbers

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Gases. Liquefied

Liquid air

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Nitrogen. Liquid

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Architecture

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Atomic power plants

Automation

Automobile industry and trade

Building

Building laws and regulations

Building trades

Chemical industries

Cities and towns

Coal mines and mining

Colleges and universities

Cosmetic industry and trade

Electric industries

Electric lines

Electric plants (central stations)

Electric utilities

Electricity supply

Electronics industry

Engineering

Engineering education

Engineering research

Engineers

Fish industry

Food industry and trade

Fuel supply

Gas, Natural

Gas, Natural—Pipe lines

Gas industry

Gas supply

Iron industry and trade

Lead mines and mining

Machinery industry

Metal trade

Metal working industries

Mines and mineral resources

Moving picture industry

Paper and pulp mills

Petroleum industry and trade

Petroleum products pipe lines

Plastics industries

Radio broadcasting

Railroads

Railroads—Electrification

Roads

Scientific education

Shipbuilding

Shipping

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Space research  
Steel industry and trade  
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Hot weather  
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Temperature  
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Fuel

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Heat pump

Heating. Warm air

Heating from central stations

Hot water heating

Insulation (heat)

Lighting—Heating aspects

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Refractory materials

Solar heating

Steam heating

Swimming pools—Heating

Ventilation

—*also* subdivision Heating and ventilation under special subjects, e.g.

Air raid shelters

Apartment houses

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Airplanes—Hydraulic equipment  
Airplanes, Military—Hydraulic equipment  
Airplanes, Supersonic—Hydraulic equipment  
Hydraulic motors  
Torque converters  
Tractors—Hydraulic equipment  
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Floods  
Fluids  
Hydraulic engineering  
Hydrostatics  
Intakes  
Jets  
Liquids  
Nozzles  
Run-off  
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Couette flow

Drops

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**HYDROGEN bromide.** *See Hydrobromic acid*

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**HYDROGEN cyanide.** *See Hydrocyanic acid*

**HYDROGEN fluoride.** *See Hydrofluoric acid*

**HYDROGEN halides**

*See also*

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Cations  
Counters (electrons, ions, etc.)  
Dissociation

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## Electrons

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See also

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Roads—Iowa

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See also

- subdivisions, e.g.,  
Moving picture industry  
Nutrition problems  
Petroleum  
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See also

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*See also*

**Deuterium**

*also* subdivision Isotopes under special subjects, e.g.

Argon  
Boron  
Bromine  
Calcium  
Carbon  
Cerium  
Cesium  
Cobalt  
Copper  
Fluorine  
Helium  
Indium  
Iodine  
Krypton  
Lead  
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Strontium  
Sulfur  
Uranium  
Zinc

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**ISRAEL**

*See also* subdivision Israel under special subjects, e.g.

Food industry and trade  
Hygiene, industrial  
Petroleum industry and trade  
Public health  
Water, underground  
Water supply

**ISTANBUL****Water supply**

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*See also* subdivision Italy under special subjects, e.g.

Air pollution  
Architecture  
Atomic power plants  
Automobile industry and trade  
Chemical industries  
Electric plants (central stations)  
Electricity supply  
Electronics industry  
Engineering education  
Food industry and trade  
Housing  
Mines and mineral resources  
Petroleum  
Petroleum industry and trade  
Petroleum products pipe lines  
Plastics industries  
Steel works  
Textile industry  
Warships

**ITCHING**

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Gas, Natural  
Gas industry  
Geology  
Metal working industries  
Mines and mineral resources  
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Color

Daylight, Artificial

Diffraction

Glare

Infrared rays

Interference (light)

Lighting

Photochemistry

Photoelasticity

Photoelectric effect

Photometry

Phototaxis

Plastics. Effect of light on

Polarization (light)

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Buildings—Exterior lighting  
Sports, Lighting for  
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Daylight, Artificial

Electric lamps

Gas lighting

Glare

House lighting

Light projection

Office lighting

Photometry

Searchlights

Sports, Lighting for

Stage lighting

Street lighting

Tunnel lighting

also subdivision Lighting under special subjects, e.g.

Airports

Auditoriums

Automobile sales buildings

Ballrooms

Bank buildings

Bridges

Churches

Courthouses

Dentists offices

Electric plants (central stations)

Factories

Garages

Gardens

Golf links

Gymnasiums

Hangars

Hospitals

Laboratories

Library buildings

Lobbies (architecture)

Lunchrooms and cafeterias, Employees

Motels

Motor vehicles

Moving picture photography

Moving picture studios

Moving picture theaters

Municipal buildings

Museums

Photography

Printing offices

Race tracks

Recreation rooms

Repair shops

Road signs

Roads

School buildings

Show windows

Sidewalks

Signs

Stadiums

Stock exchange buildings

Store buildings

Swimming pools

Synagogues

Television studios

Textile mills

Theaters

Warehouses

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**Heating aspects***See Lighting—Heating aspects***LIGHTING engineering**

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Electric utilities

Gas, Natural

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Friction  
Lubricating greases  
Lubricators  
Molybdenum sulfides  
Oil films  
Oil reclamation  
Oil seals

**Water as a lubricant**

also subdivision *Lubrication under special subjects*, e.g.

Air compressors  
Airplane engines  
Automobile engines  
Automobiles  
Bearings  
Bearings, Ball  
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Bearings, Thrust  
Coal mining machinery  
Compressors  
Construction equipment  
Conveying machinery  
Diesel engines  
Diesel engines, Marine  
Electric motors  
Gas compressors  
Gas turbines, Aircraft  
Gearing  
Internal combustion engines  
Mining machinery  
Motor truck engines  
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Paper making machinery  
Pumps  
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Steam turbines, Marine

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Cams

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Industrial management  
Inspection  
Machine shop practice  
Machinery, Replacement of  
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*See also*

Arbors and mandrels  
Assembling methods  
Bending  
Broaching  
Centering (machine work)  
Chucks  
Dies  
Drafting room practice  
Drilling and boring (metal working, etc.)  
Forking  
Foundry practice  
Gages  
Gear cutting  
Grinding  
Grinding machines  
Grooving  
Hard facing  
Indexing (machine work)  
Inspection  
Lathes

**Machine tools**

- Metal cutting  
Milling  
Sheet metal work  
Stamping  
Steel works  
Thread cutting  
Tolerance  
Turning  
Welding  
also subdivision Manufacture under special subjects, e.g.  
Automobile engines  
Axles  
Bearings, Roller  
Bombs, Aerial  
Cams  
Crankshafts  
Cylinders (engines, etc.)  
Electric motors  
Gas turbines, Aircraft  
Gearing  
Guided missiles  
Keys and keyways (machinery)  
Motor trucks  
Pistons  
Space vehicles  
Springs (mechanism)  
Trailers

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Machine shop practice  
Railroads—Shops

**Costs**

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*See also*

Holding devices (machine work)  
Machine tools

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*See also*  
Electric driving

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*See also*

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**See also**

- Arbors and mandrels  
 Bending machines  
 Chucking machines  
 Cutting tools  
 Drilling and boring machinery  
 Gear cutting machines  
 Grinding machines  
 Honing machines  
 Lathes  
 Machine shop practice  
 Metal cutting  
 Metal work  
 Milling cutters  
 Milling machines  
 Pneumatic tools  
 Polishing machines  
 Presses  
 Punching machinery  
 Saws. Metal working  
 Shears (machines)  
 Spindles (machine tools)  
 Swaging machines  
 Tapping machines  
 Threading machines  
 Tool steel

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**See also**

- Transfer mechanisms

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**See also**

Arbors and mandrels  
 Chucks  
 Holding devices (machine work)  
 Jigs

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**MACHINE translation.** See Translating machines

**MACHINE work**

See also

- Broaching
- Centering (machine work)
- Grinding
- Holding devices (machine work)
- Honing
- Indexing (machine work)
- Machine shop practice
- Plastics—Cutting
- Reaming
- Time study (of machinery)
- Tolerance
- Turning

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- Automated line machines giants with tracer-transfer setup. *il diag Iron Age* 196:50-1 D 30 '65  
 Automatic copying lathe. *il Engineer* 221:498 Mr 25 '66  
 Automatic machining of differential spiders. D. Santolla and B. V. Fasulo. *il Mach* 72:96-100 F '66  
 Automatic optical follower produces parts from drawings. *il diag Mach* 72:110-11 Ap '66  
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 Faster way to contour mill. R. LeGrand. *il diags Am Mach* 110:72-4 Mr 28 '66  
 Frequency signals direct contouring machine. G. E. Culy. *diags Control Eng* 12:93 D '65  
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 Tracing takes on a new job. G. DeGroat. *il diag Am Mach* 110:117-18 Je 20 '66

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- Churchill's machine tool plant reorganized. *il Engineering* 202:30 J1 1 '66  
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- 2000 tons of cooling. 700,000 cfm of air control temperatures in machine tool plant. Kearney & Trecker corp. *il Heating-Piping* 38:50 O '66

## Equipment

- Air conditioning gears new plant for year-round comfort. W. Elliott. *il Plant Eng* 20:152-3 Ap '66  
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- Less test piece machining cuts leadtimes, costs. C. F. Stugard. *il Steel* 159:48 O 31 '66

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- Balancing of machinery
- Bearings
- Beltting
- Bending machines
- Bolts and nuts
- Brakes
- Bushings
- Calenders
- Casting machines
- Clamps
- Cleaning machinery
- Clutches
- Coal mining machinery
- Computers
- Conveying machinery
- Couplings
- Cranes, derricks, etc.
- Crankcases
- Crankshafts
- Crushing machinery
- Cutting off machines
- Die casting machines
- Disks
- Dyeing machines
- Electric machinery
- Electric welding machines
- Engineering
- Escapement mechanism
- Excavating machinery
- Fans. Mechanical
- Filling machines
- Fits (machinery)
- Food machinery
- Forking machinery
- Foundry machinery
- Friction
- Gear cutting machines
- Glass machinery
- Governors (machinery)
- Hoisting machinery
- Hydraulic machinery
- Hydraulic presses
- Internal combustion engines
- Inventions
- Jacks
- Jigs
- Keys and keyways (machinery)

**MACHINERY—See also—Continued**

Lathes  
 Lenses  
 Lubrication and lubricants  
 Machine shop practice  
 Machine tools  
 Marking machines  
 Mechanical engineering  
 Mechanics  
 Metal working machinery  
 Milling machines  
 Mining machinery  
 Packaging machinery  
 Packing  
 Paper cutting machines  
 Paper making machinery  
 Paving machines  
 Pins, Machinery  
 Pneumatic machinery  
 Polishing machines  
 Power transmission  
 Presses  
 Printing machinery  
 Printing presses  
 Pumping machinery  
 Pumps  
 Refrigeration and refrigerating machinery  
 Riveting machines  
 Road making machinery  
 Rolls  
 Shafting  
 Shafts  
 Shoveling machines  
 Spinning machinery  
 Springs (mechanism)  
 Steam turbines  
 Tamping machines  
 Testing machines  
 Textile machinery  
 Threading machines  
 Time study (of machinery)  
 Trenching machinery  
 Turbines  
 Valves  
 Washers (machinery)  
 Welding machines  
 Winding machines  
 Woodworking machinery

**Alinement**  
 See Alinement of machinery

**Balancing**  
 See Balancing of machinery

**Bases**  
 Analyzer detects vibration in machine tool bases. *il* *diag* Plant Eng 20:140 Ja '66  
 Welded machine base gives production savings. K. H. Spencer. *il* Mach 72:120-1 Ap '66

**Bedplates**  
 New system anchors machines securely. A. W. Young. *diag* Iron Age 197:70 Mr 17 '66

**Control**  
 Designing a fluidic control system. W. F. Gesell. *il* *diag* Hydraulics & Pneumatics 19:117-22 My '66; Same cond. Machine Design 38:202+ My 26 '66  
 Fluidic controls gain ground in a variety of machines. *il* Product Eng 37:74 My 23 '66  
 Fluidics find practical use in machine control. *il* *diag* Product Eng 37:43-5 Ap 11 '66  
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 Servo valve gives tracking head fast response. B. W. Long. *il* Hydraulics & Pneumatics 19:100-1 Je '66  
 Word association tests point to snags in controls. J. Kolb. *il* Product Eng 37:42-4 O 24 '66

See also  
 Drilling and boring machinery—Control  
 Grinding machines—Control  
 Plastics machinery—Control

**Design**  
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 Design profile; with his calm approach, big projects go like a breeze; Bob Harriau. Product Eng 37:92-3 Ag 15 '66  
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 Freedom in bolted joints. H. A. Dinter. *diag* Machine Design 38:193-93 O 27 '66  
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 How to compute a meaningful factor of safety. R. E. Little. *il* *diag* Machine Design 38:165-70 Jl 21 '66  
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 How to design slow-speed roller-chain drives. S. Reibel. *diag* Machine Design 38:159-61 Ag 4 '66  
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 Odd shapes and materials save weight in structures. N. P. Chironis. *diag* Product Eng 37:96-9+ Ag 29 '66  
 Operator is only human, educator reminds designers. J. B. Liljedahl. Product Eng 37:60 O 10 '66  
 Shimmering image becomes a solid object. R. Khol. *il* Machine Design 38:138-9 S 29 '66  
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See also  
 Cams  
 Design engineering conference  
 Drafting room practice  
 Fits (machinery)  
 Friction  
 Gearing—Design  
 Keys and keyways (machinery)  
 Machine tools—Design  
 Machinery, Kinematics of

**Exhibitions**  
 Brno international trade fair, 8th. Sept. 11-20. *il* Engineer 222:507-9, 541-2 S 30-O 7 '66 (to be cont)  
 Design in engineering exhibition, London. *il* Engineering 200:550-1 O 29 '65  
 Gauge and tool and power press exhibition, 7th. London, May 2-11. *il* Engineering 201: 921-2 My 13 '66  
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 Leipzig fair, March 6-11. *il* *diag* Engineer 221:595-7, 631-2, 669-72 Ap 15-29 '66  
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- Harmonic analysis
- Integrals
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 Mechanics, Celestial  
 Metric system  
 Numbers, Theory of  
 Numeration  
 Polynomials  
 Probabilities  
 Ratio and proportion  
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  - Plating
  - Punching
  - Punching machinery
  - Rolling (metal work)
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**METALLURGICAL analysis****See also**

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Metallurgical laboratories  
Smelting works  
Steel works

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 Evaporation  
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Clay  
 Compressed air  
 Gases  
 Paper  
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- Europe's largest press at John Thompson motor pressings Ltd. *il diag Engineering 201:374 My 6 '66*
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Big swing to power steering. J. Poland. II Pit & Quarry 59:114+ S '66  
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*See also*

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New York (city)—Galleries and museums

**Lighting**

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Finger nails

**NAIR, John H.**American institute of chemists cites Nair; this year's gold medal winner. *por* *Chem & Eng N* 44:78+ My 16 '66**NAME plates**Colors for sunken letters in nameplates. *Ind Finishing* 42:104-5 Ap '66**NAPALM**Napalm-B to use huge amount of polystyrene. *Chem & Eng N* 44:24 Mr 14 '66**NAPHTHA**Europe's naphtha demand. *up. Chem & Eng N* 44:9-10 Ag 22 '66High-temperature cracking; with process flowsheet. H. K. Kamptner and others. *il* *diag* *Chem Eng* 73:80-2, 93-8 F 23 '66; *Hydrocarbon Process & Pet Refiner* 45:187-93 Ap '66Lifting of naphtha import lid opposed. *Oil & Gas J* 64:66 J1 11 '66Naphtha-cracker operators get versatile tool. *flow sheet* *il* *diag* *Oil & Gas J* 64:116-19 S 6 '66U.S. firms need foreign naphtha to compete, study claims. *Oil & Gas J* 64:102-3 Ap 25 '66Use of naphtha for blast-furnace gas enrichment. H. B. Lloyd and others. *il* diags *Iron & Steel Inst J* 204:203-7 Mr '66**NAPHTHALENE**Acidity of hydrocarbons; kinetics and mechanism of proton exchange of benzene and naphthalene with lithium cyclohexylamide in cyclohexylamine. A. Streitwieser, jr. and others. *bibliog* *Am Chem Soc J* 87:5383-8 D 5 '65Addition of  $\text{B}_2\text{Cl}_4$  to 1,3-cyclohexadiene and the structural similarity of the adduct to that formed between  $\text{B}_2\text{Cl}_4$  and naphthalene. M. Zeldin and T. Wartik. *Am Chem Soc J* 88:1336-8 Mr 20 '669,10-Dihydronaphthalene; formation from bullvalene and Nenitzescu's hydrocarbon, thermal reorganization, and photorearrangement to bullvalene. W. V. Doering and J. W. Rosenthal. *bibliog* *Am Chem Soc J* 88:2078-9 My 5 '667,12-Dihydropleiadene; free-energy barriers to conformational inversion. P. T. Lansbury and others. *Am Chem Soc J* 88:1477-82 Ap 5 '66Isolation and identification of  $\text{C}_{10}$  to  $\text{C}_{17}$  alkyl naphthalenes, alkylbiphenyls, and alkyl dibenzofurans from the 275° to 305° C; dinuclear aromatic fraction of petroleum. F. F. Yew and B. J. Mair. *bibliog* *Anal Chem* 38:231-7 F '66Petrochemical guide; naphthalene; how, where, who; future. R. B. Stobaugh. diags *Hydrocarbon Process & Pet Refiner* 45:149-55 Mr '66Reductive cleavage of toluenesulfonates with sodium naphthalene. W. D. Closson and others. *bibliog* *Am Chem Soc J* 88:1581-3 Ap 5 '66**Manufacture**Detol; Houdry process & chemical co., Div. of Air products & chemicals, inc. *flow diag* *Hydrocarbon Process & Pet Refiner* 44:197 N '65Hydeal; Universal oil products co. *flow diag* *Hydrocarbon Process & Pet Refiner* 44:213 N '65Unidak; Union oil company of America. *flow diag* *Hydrocarbon Process & Pet Refiner* 44:281 N '65**NAPHTHALENEACETIC acid**Metabolism of naphthaleneacetic acid-1- $\text{C}^{14}$  in rats. E. J. Lethco and E. A. Brouwer. *bibliog* *J Agri & Food Chem* 14:532-5 S '66**NAPHTHALENEDIAMINE**Fluorometric determination of selenium in biological material with 2,3-diaminonaphthalene. J. H. Watkinson. *bibliog* *Anal Chem* 38:92-7 Ja '66**NAPHTHENES**Thermal stability of endothermic heat-sink fuels. A. C. Nixon and H. T. Henderson. *bibliog* *il* *diag* *Ind & Eng Chem Product Res & Develop* 5:87-92 Mr '66**NAPHTHOL**Mass transfer model for Kolbe-Schmitt carbonation of 2-naphthol. P. G. Phadtare and L. K. Doraiswamy. *bibliog* diags *Ind & Eng Chem Proc Design* 4:274-80 J1 '65; *Discussion*. 5:351-2 J1 '66**NAPHTHOLS**Dyeing of vats and naphthols on cellulosic fibers. W. C. Wilcoxson. *Am Dyestuff Rep* 55:444-50 Je 6 '66Molecular complexes and their spectra; hydrogen-bonding complexes of phenol and naphthols with trimethylamine N-oxide. T. Kubota. *bibliog* *Am Chem Soc J* 88:211-16 Ja 20 '66**NAPHTHOQUINONE**Mass spectra of naphthoquinones; vitamin K<sub>2</sub>. S. J. Di Mari and others. *bibliog* *Am Chem Soc J* 88:1226-32 Mr 20 '66Studies in mass spectrometry; mass spectra of substituted naphthoquinones. J. H. Bowie and others. *Am Chem Soc J* 87:5094-9 N 20 '65

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Faster speeds claimed for new napping unit. *Am Dyestuff Rep* 54:1111 D 6 '65

NARCOTIC addicts. See Drug habit

## NARCOTICS

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Marihuana

## NASSAU COUNTY, New York

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Water supply—Nassau County, New York

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COSPUP: tactician for national science policies. *Chem & Eng N* 44:33-40 My '66

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## NATIONAL association of home builders

NAHB's Blackmon: man with connections. *Eng N* 175:222-7 D 16 '65

NATIONAL association of lighting maintenance contractors

Meeting. Phoenix, Ariz. April 20-24. *Elec Constr & Maint* 65:191-2 Je '66

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Annual meeting and exhibit, 34th. Washington, Sept. 7-10; program. *Inland Ptr/Am Lithogr* 157:52-3 Ag '66

Annual meeting, 33d. Chicago. *Inland Ptr/Am Lithogr* 156:112+ N '65

NATIONAL bureau of standards. See United States—Standards. National bureau of

## NATIONAL coal association

Annual convention, 49th. Washington, June 19-21; with abstracts of papers. *Coal Age* 71:112-14 J1 '66

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NCR-BCR conference, Pittsburgh. Sept. 14-15; abstracts of papers. *Coal Age* 71:74-7 O '66

NATIONAL conference of electric and gas utility accountants

Conference, New Orleans, May 2-4. *Am Gas Assn Mo* 48:33-6+ Ja; 30-2+ Je '66

## NATIONAL conference on fluid power

Conference, 21st. Chicago. *Hydraulics & Pneumatics* 19:69+ Ja '66

Conference, 22d. Chicago, Oct. 20-21; with program and abstracts of papers. *Hydraulics & Pneumatics* 19:109-16 O '66

## NATIONAL conference on standards

Conference, 16th. San Francisco, Feb. 14-16; with program. *Mag of Stand* 36:345-6; 37: 99-118 N '65, Ap '66

## NATIONAL crushed stone association

Annual meeting, 49th. Chicago, Feb. 6-10; with abstracts of papers. *Pit & Quarry* 58: 102-12 Ap '66; *Rock Prod* 69:105-6+ Ap '66

Board of directors midyear meeting. Whiteface, N.Y. July 14-15. *Pit & Quarry* 59:137-9 S '66

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Let's push for a simplified electrical code.

R. Gunning. *Plant Eng* 20:122-3 My; 130-1

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What's new in the 1965 National electrical code? G. H. Tryon. *diags Mag of Stand* 36:363-5; 37:52-4 D '65, F '66

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NATIONAL electrical manufacturers association

Annual meeting, 39th. Washington. *Elec World* 164:75-6 N 29 '65; *Wire & Wire Prod* 41:103-4+ Ja '66

NATIONAL engineering laboratory. See Great Britain—National engineering laboratory

NATIONAL fire protection association Annual meeting, 70th. Chicago, May 16-20; abstracts of papers. *Elec Constr & Maint* 65:196+ Je '66

NATIONAL institute of ceramic engineers

Membership roster. *Am Cer Soc Bul* 45:998-1000 O '66

## NATIONAL lime association

Annual meeting, 64th. Litchfield Park, Ariz. *Rock Prod* 69:106+ Je '66

Annual meeting, 64th. Phoenix, Ariz. April 5-6; abstracts of papers. *Pit & Quarry* 58: 68-72 Je '66

## NATIONAL limestone institute

Annual meeting, 21st. Washington, Jan. 17-19; with abstracts of papers. *Pit & Quarry* 58:154-9 Mr '66; *Rock Prod* 69:104-6 Mr '66

Midyear meeting, St. Charles, Ill. July 23-26. *Pit & Quarry* 59:124-5+ S '66

## NATIONAL machine tool builders association

Annual meeting, 64th. Miami. *Automotive Ind* 133:77+ D 1 '65

Builders push fight for essentiality. *Am Mach* 110:106-7 Ag 15 '66

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## NATIONAL metal decorators association

Annual meeting, 31st. Atlantic City, N.J. Oct. 18-20. *Inland Ptr/Am Lithogr* 156:120-1 D '65

## NATIONAL monuments

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Chiricahua National Monument, Arizona

## NATIONAL petroleum council

NPC riding high in Washington. G. T. Kinney. *Oil & Gas J* 64:81-3 Ag 1 '66

## NATIONAL physical laboratory, Teddington.

See Great Britain—National physical laboratory, Teddington

## NATIONAL power conference

Conference, Albany, N.Y. Sept. 19-23; abstracts of papers. *Combustion* 37:43-7 N; 29-32 D '65

## NATIONAL ready mixed concrete association

NSGA-NRMCA board of directors joint semi-annual meeting, Williamsburg, Va. Sept. 27-29. *Pit & Quarry* 58:134-6 D '65

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**NATIONAL science foundation—Continued**

Centers of excellence show progress; chemistry departments use NSF grants to add faculty, expand facilities, and attract graduate students. *il Chem & Eng N 44:64-5* Ap 18 '66

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**NATURAL gas. See Gas, Natural**

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**NATURAL gasoline. See Gasoline, Natural****NATURAL history**

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Coal

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Fuel

Gas, Natural

Peat

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Ship case problem. E. M. Avallone. *diags Naval Eng J 78:523-8* Je '66

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War games

**NAVAL engineers. See Marine engineers****NAVAL engineers, American society of. See American society of naval engineers****NAVAL officers****Training**

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**NAVIER-STOKES equation of motion. See Equation of motion****NAVIGATION**

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Big money in Omega. S. Payne. *Electronics 39:132-3* Ji 11 '66

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Direction finding apparatus

Inertial guidance systems

Loran system

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Radio aids to navigation

Steering gear

**NAVIGATION, Aerial. See Air navigation****NEBRASKA**

See also subdivision Nebraska under

special subjects, e.g.

Electric utilities

Gas, Natural

Geology

Petroleum

Petroleum industry and trade

**NEEDLE bearings. See Bearings, Needle****NEEDLE loom non-wovens. See Textile fabrics—Bonded web****NEEDLES**

Forge mill. Redditch. J. G. Rollins. *il plans diags Engineer 220:799* N 12 '65

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  - Bridges
  - Electric plants (central stations)
  - Electronics industry
  - Gas, Natural
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Counters (electrons, ions, etc.)

Nucleons

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## NEVADA

*See also* subdivision Nevada under special subjects, e.g.

Geology

Gold mines and mining

Gypsum mines and mining

Mines and mineral resources

## NEW BRUNSWICK

*See also*

Hydroelectric plants—New Brunswick

Mines and mineral resources—New Brunswick

Soils—New Brunswick

## NEW ENGLAND

*See also* subdivision New England under special subjects, e.g.

Electric lines

Electric utilities

Electricity supply

Water supply

## NEW HAMPSHIRE

*See also*

Mines and mineral resources—New Hampshire

## NEW HAVEN, Connecticut

## Architecture

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## NEW JERSEY

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Architecture, Domestic

Atomic power plants

Electric utilities

Geology

Hydroelectric plants

Mines and mineral resources

Roads

Water supply

Zinc mines and mining

## NEW MEXICO

*See also* subdivision New Mexico under special subjects, e.g.

Copper mines and mining

Gas, Natural

Geology

Mines and mineral resources

Molybdenum mines and mining

Petroleum

Petroleum industry and trade

Roads

Uranium mines and mining

Water supply

## NEW ORLEANS

## Air pollution

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NEW products. *See* Products. New

## NEW YORK (city)

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*See also*

Airports—New York (city)

Building—New York (city)

Building laws and regulations—New York (city)

Electricity supply—New York (city)

Housing—New York (city)

## Air pollution

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## Bridges

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## Harbor

Back to the waterfront: chaos or control? *il* plans diags *Prog Arch* 47:128-39 *Ag* '66

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Tv scores tko on Garden site. *il* diag *Prog Arch* 47:59-60 *Ap* '66

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#### World trade center (proposed)

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Fair grounds become open-air testing laboratory. il Materials Res & Stand 6:414-15 Ag '66

#### NEW YORK (state)

See also subdivision New York (state) under special subjects, e.g.  
Architecture. Domestic  
Atomic power plants  
Building laws and regulations  
Electric utilities  
Gas. Natural  
Geology  
Hydroelectric plants  
Mines and mineral resources  
Petroleum  
Roads  
Water supply  
Zinc mines and mining

#### NEW YORK state university

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#### NEW YORK university

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#### NEW ZEALAND

See also subdivision New Zealand under special subjects, e.g.  
Chemical industries  
Electric lines  
Electricity supply  
Hydroelectric plants  
Petroleum industry and trade  
Roads  
Volcanoes

#### NEWFOUNDLAND

##### See also

Hydroelectric plants—Newfoundland  
Iron ores—Newfoundland  
Petroleum—Newfoundland

#### NEWPORT, Rhode Island

##### Architecture

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##### Bridges

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#### NEWSPAPERS

##### Printing

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##### Testing

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#### NIAGARA FALLS

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##### Bridges

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#### NICKEL

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*See also*

Ear—Protection

Radar—Interference

Radio communication—Interference

NOISE—See also—*Continued*

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- Silencers
- Soundproofing
  - also subdivision Noise under special subjects, e.g.
- Air conditioning equipment
  - Airplanes
  - Airplanes, Jet propelled
  - Amplifiers
  - Amplifiers, Transistor
  - Automobiles
  - Blowers
  - Crystal diodes
  - Diesel engines, Automotive
  - Electric fans
  - Electric machinery
  - Electric transformers
  - Electronic apparatus and instruments
  - Fans, Mechanical
  - Gas turbines, Aircraft
  - Heat exchangers
  - High fidelity sound systems
  - Lasers
  - Machinery
  - Moving picture studios
  - Oil burners
  - Oscillators
  - Radio apparatus
  - Radio receiving apparatus
  - Rock drills
  - Semiconductors
  - Street traffic
  - Telephone
  - Transistors
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- NORTH DAKOTA**  
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**NORTH SEA**

- See also  
Gas, Natural—North Sea

**NORTHEAST**

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Accounting—Mechanical aids

Computers

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Gas companies—Buildings

High buildings

Insurance company buildings

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Oil companies—Buildings

Public utilities—Buildings

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See also

Architects offices  
Newspaper offices  
Office lighting

**OFFSET** printing. See Printing, Offset

**OFFSHORE** drilling structures. See Petroleum—Offshore drilling structures

**OHIO**

See also subdivision Ohio under special subjects, e.g.

Coal mines and mining  
Electric plants (central stations)  
Gas, Natural  
Gas, Natural—Pipe lines  
Geology  
Mines and mineral resources  
Petroleum  
Roads  
Sewerage

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**OIL burning equipment**

See also

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Mineral oils  
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**Alaska**

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*also* subdivision Patents under special subjects, e.g.

Automobiles

Ceramics

Containers, Pressurized

Cosmetics

Drugs

Electronics

Food industry and trade

Glass machinery

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#### Chemical plants—Power

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Drug factories

Factory management

Food factories

Foundry management

Glass factories

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**RECORDS**

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Inventories

Maintenance departments—Records

Microfilm records

Photographic records

Printing offices—Records

Production control

Punched card system

Railroads—Records

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**REFRIGERATION and refrigerating machinery**

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 Piping (refrigerating plants)  
 Refrigerants  
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**REFUSE as fertilizer**

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Food research  
Forging research  
Gas research  
Glass research  
Government research  
Heating research  
Highway research  
Industrial research  
Lighting research  
Lubrication research  
Metallurgical research  
Mineralogical research  
Mining research  
Oceanographic research  
Operations research  
Paint research  
Petroleum research  
Pharmaceutical research  
Plastics research  
Public health research  
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Hydraulic engineering  
Ice on rivers, lakes, etc.  
Kaweah River  
Kosi River  
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 Inclusions (mineralogy and petrology)  
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**ROCKWELL hardness test.** See Hardness—Testing

**ROCKY MOUNTAIN region**

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Coal sampling  
Gas sampling  
Sewage sampling  
Soil sampling  
Water sampling  
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*See also*

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Concrete—Aggregate  
Oil sand  
Quicksand  
Sandstone  
Silica  
Water purification—Sand removal

**Moisture content**

- California producer pioneers dewatering technique. *il diag Rock Prod* 69:96+ F '66

**SAND, Foundry**

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**Moisture content**

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- Production and value of sand and gravel in 1965. D. K. Charney, Pit & Quarry 59:148+ S '66
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**SAND and gravel plants**

- Nature's forces well-revealed to Denver gravel operations. il Pit & Quarry 58:124+ N '65

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- Aggregate and concrete producer rebuilds to meet chanking needs. B. C. Herod, flow diag il Pit & Quarry 58:103-4+ D '65
- Big plant emphasizes little things for top efficiency; Consolidated rock products co. J. H. Bergstrom, il diag Rock Prod 69:112-15 S '66
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- Closed circuit tv for sand and gravel plants. il Engineering 200:594 N 5 '65
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- Cutterhead dredge, rising current trash-removing device, featured at Arroyo Rock gravel plant. H. F. Utley, il diag Pit & Quarry 58:104-7 Je '66
- Discovery of clean aggregate deposit prompts erection of new plant in California; Somis rock products, inc. H. F. Utley, flow diag il Pit & Quarry 59:86-8 Ag '66
- Efficiency, flexibility boosted in rebuilt Oregon operation; McKenzie sand & gravel co. B. C. Herod, il Pit & Quarry 59:100-3 Ag '66
- Equipment matched to deposit to supply Detroit area market; Lyon sand & gravel co. flow diag il Pit & Quarry 58:121-3 Ap '66
- European sand classifier guarantees tighter gradings. R. Ironman, il Rock Prod 68:59 D '65
- Faster, more dependable tractors boost Kern Rock production. il Rock Prod 69:145-6 My '66
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- New operation meets management goals; Lexington sand & gravel co. South Acton, Mass. B. C. Herod, il diag Pit & Quarry 59:160-4 S '66
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- Quality production on problem for small new aggregate plant; Conneaut Lake Sand and Gravel, B. C. Herod, il Pit & Quarry 58:132-5 Ap '66
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- Preventive maintenance is built in at Arizona Sand & Rock. il Rock Prod 69:67 F '66

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- Sampling for production control. W. E. Hole, jr. Pit & Quarry 58:75-7 Je '66
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- Deposit dictates equipment choice for Potomac Sand & Gravel. W. L. Price, diags Rock Prod 69:83-4 F '66
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**SEDIMENTATION apparatus****See also**

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**See also**

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Dialysis  
Elutriation  
Extraction apparatus  
Extraction processes  
Flotation process (non-metals)  
Hydrocarbons—Separation processes  
Magnetic separation of ores  
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Water pollution  
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Chaska, Minnesota  
Chicago  
Cleveland  
Denver  
Detroit  
Fort Lauderdale, Florida  
Galena, Illinois  
Houston, Texas  
Indianapolis  
Manchester, England  
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Kaolin  
Lead silicates  
Magnesium silicates  
Mica  
Pegmatites  
Peridotite  
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Ions

Solubility

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See also

Acetonitrile  
Alcohol  
Benzene  
Chloroform  
Cleaning compositions  
Extraction processes  
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- Automobile industry and trade
  - Canals
  - Hydroelectric plants
  - Metal working industries
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Asphalt  
Automobiles  
Concrete  
Construction equipment  
Diesel engines. Automotive  
Gas turbines. Aircraft  
Hydraulic machinery  
Internal combustion engines  
Motor boat engines. Outboard  
Motor trucks  
Pipes  
Plastics  
Pneumatic machinery  
Roads  
Roofing  
Tractors

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- Labor standards
- National conference on standards
- Products, Certification of
- Quality of products
- Radio standards
- Safety standards
- Standards engineers society
- Television standards
- Textile standards
- Time standards
- also subdivision Standards under special subjects, e.g.*
- Amplifiers
- Automobiles
- Boilers
- Building
- Computers
- Concrete
- Concrete, Reinforced
- Concrete construction
- Containers (for shipping)
- Control equipment
- Copper alloys
- Electric apparatus and appliances
- Electric apparatus and appliances, Domestic
- Electric conduits
- Electric distribution

- Electric equipment
- Electric generators, Synchronous
- Electric instruments
- Electric motors
- Electric motors, Alternating current
- Electric motors, Direct current
- Electric motors, Synchronous
- Electric substations
- Electric switchgear
- Electric transformers
- Electronic apparatus and instruments
- Floors, Concrete
- Gas appliances
- Hygiene, Industrial
- Lighting
- Lubrication and lubricants
- Lumber
- Machine tools
- Machinery
- Magnetic tape
- Moving picture films
- Moving picture machines
- Moving picture photography
- Moving picture sound recording
- Moving pictures
- Paper
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- Petroleum products
- Photography
- Pipes
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- Piping
- Plastics
- Plumbing
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Austenite  
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 Cold storage  
 Factories—Yards  
 Grain storage  
 Oil storage  
 Racks  
 Shelving. Steel  
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Bridges—Stresses  
Columns  
Concrete construction—Design  
Corrosion and anti-corrosives—Stress corrosion  
Creep of materials  
Creep of metals  
Creep of plastics

**Deformation (mechanics)**

- Elasticity  
Fatigue in metals  
Friction. Internal  
Glass—Strains and stresses  
Hysteresis (mechanics)  
Influence lines  
Load (mechanics)  
Metals—Failure  
Notched bar testing  
Photoelasticity  
Soil mechanics  
Strain waves  
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Torsion  
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Wind pressure
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- Traffic signals

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- Sidewalks
- Snow removal
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- Ames, Iowa
- Beersheba, Israel
- Chicago
- Cleveland
- Dallas
- Detroit
- Duluth
- Houston, Texas
- Knoxville, Tennessee
- Leeds, England
- London
- Manchester, England
- Minneapolis
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- Deformation (mechanics)

- Elasticity

- Factor of safety

- Fatigue in metals

- Hardness

- Impact

- Metals—Failure

- Stiffness

- Strains and stresses

- Structures. Theory of

- Tensile strength

- also subdivision Strength under special

- subjects, e.g.

- Cast iron

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- Glass

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Hydrogen sulfide  
Lead sulfide  
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Iron  
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Mercaptans

Oil fuel—Sulfur content

Sulfones

Sulfur oxides

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Rock products industry  
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Hydroelectric plants

Petroleum

Public health

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**See also**

Airport buildings  
Ore docks  
Petroleum shipping terminals  
Ports

Also subdivision Terminals under special subjects, e.g.

Airlines  
Motor bus lines  
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**See also**

American society for testing and materials  
Impact  
Laboratories



**TESTING—See also—Continued**

Magnetic testing  
Sampling  
Testing machines  
Textile testing  
    also subdivision Testing under special subjects, e.g.  
Aeronautic instruments  
Airplane parts  
Automobile parts  
Beams and girders  
Bridges  
Ceramic materials  
Clutches  
Concrete  
Corrosion and anti-corrosives  
Cotton fibers  
Electric apparatus and appliances  
Electric cables  
Electric lamps, Incandescent  
Electric resistors  
Electric welding  
Gages  
Gas turbines, Aircraft  
Glass  
Guided missiles  
Hardness  
Hydraulic machinery  
Internal combustion engines  
Lenses  
Materials  
Metals  
Mortar  
Nickel plating  
Nuclear reactors  
Paint  
Paper  
Plastics  
Radio apparatus  
Refrigerators  
Rubber  
Rubber, Artificial  
Television apparatus  
Titanium  
Titanium alloys  
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Transistors  
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 Mine waste  
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Evaporation  
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VARACTOR. See Crystal diodes



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Tensors

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Corn  
Lettuce  
Onions  
Potatoes  
Spinach  
Sweet potatoes  
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Bicycles

Electric vehicles

Motor buses

Motor trucks

Motor vehicles

Vehicles, Extraterrestrial

## VEHICLES, Extraterrestrial

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Acceleration

Electrons—Velocity

Rotation

Ultrasonic waves—Velocity

VELOCITY of light. See Light—Velocity

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See also

Gonorrhea

Syphilis

## VENETIAN blinds. See Blinds

## VENEZUELA

See also subdivision Venezuela under special subjects, e.g.

Gas, Natural

Hydroelectric plants

Petroleum industry and trade

Petroleum laws and regulations

Telecommunication

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Architecture

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See also

Air conditioning

Air filters

Air pollution

American society of heating, refrigerating and air-conditioning engineers

Cooling

Dust removal

Electric fans

Exhaust systems

Fans, Mechanical

Mine ventilation

Tunnel ventilation

also subdivisions Heating and ventilation or Ventilation under special subjects, e.g.

Air raid shelters

Apartment houses

Churches

College buildings

Factories

Gas appliances

Hospitals



**VENTILATION**—See also—*Continued*

Laboratories  
Metallurgical plants  
Office buildings  
Plumbing  
Post offices  
School buildings  
Steel works  
Store buildings  
Subways

Tables, calculations, etc.

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- Filtration plants
- Fire service (water supply)
- Hot water supply
- Pumping stations
- Reservoirs
- Water, Underground
- Water conservation
- Water distribution
- Water purification
- Water supply engineering
- Water tanks
- Water waste
- Watersheds
- Waterworks
- Wells

also subdivision Water supply under

- names of places, e.g.
- Alexandria, Louisiana
- Arvada, Colorado
- Birmingham, Alabama
- Bloomington, Indiana
- Buena Park, California
- Celina, Ohio
- Chicago
- Dayton, Ohio
- Flint, Michigan
- Houston, Texas
- Istanbul
- Johnstown, Pennsylvania
- Lake Worth, Florida
- Longoc, California
- London
- Louisville, Kentucky
- Merida, Yucatan
- Miami, Florida
- Montreal
- New York (city)
- Oregon, Ohio
- Pasadena, California
- Philadelphia
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- Rome (city)
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- Nickel
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**WEST VIRGINIA**

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Gas, Natural  
Geology  
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Petroleum  
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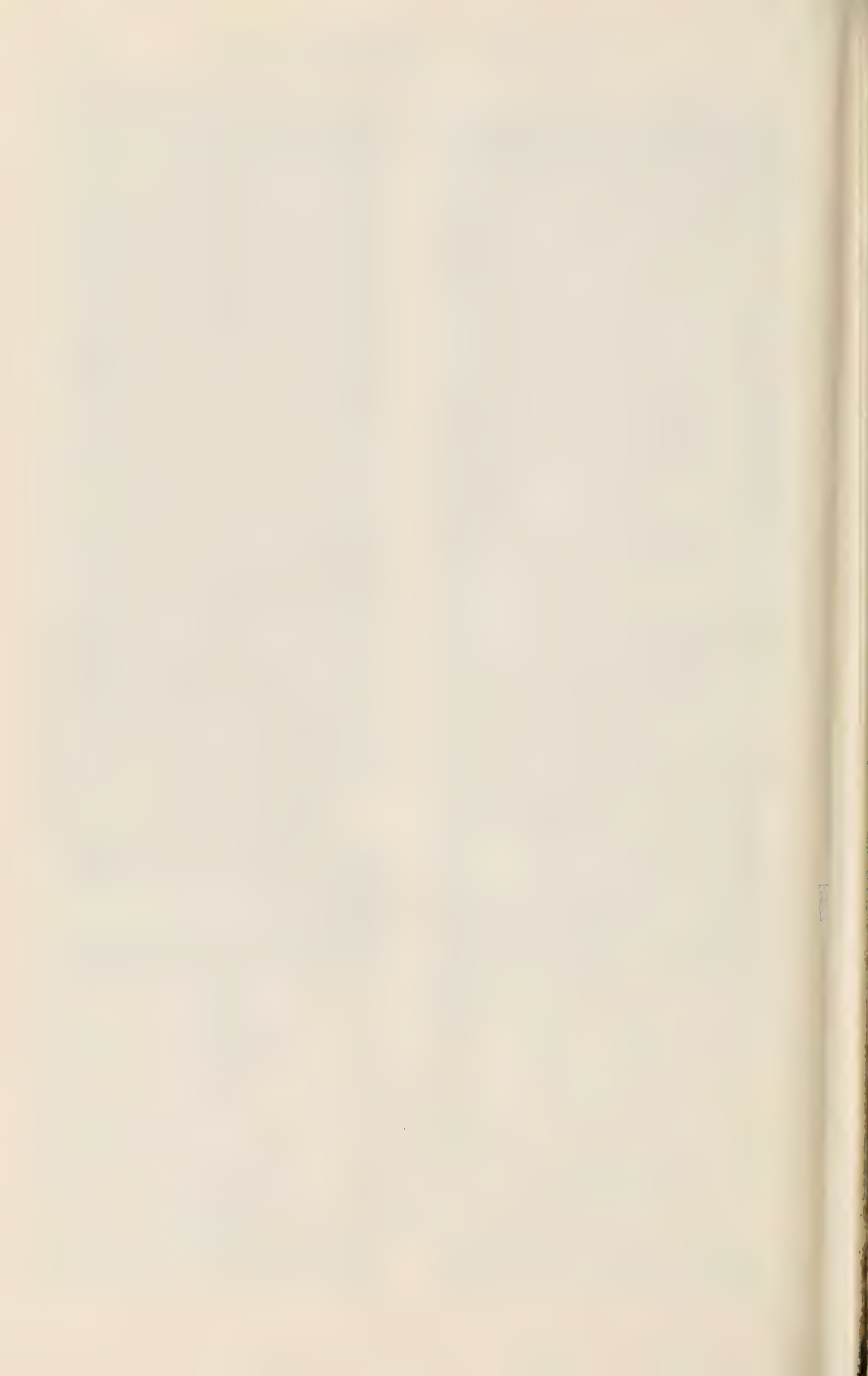
**ZOOLOGY**

See also

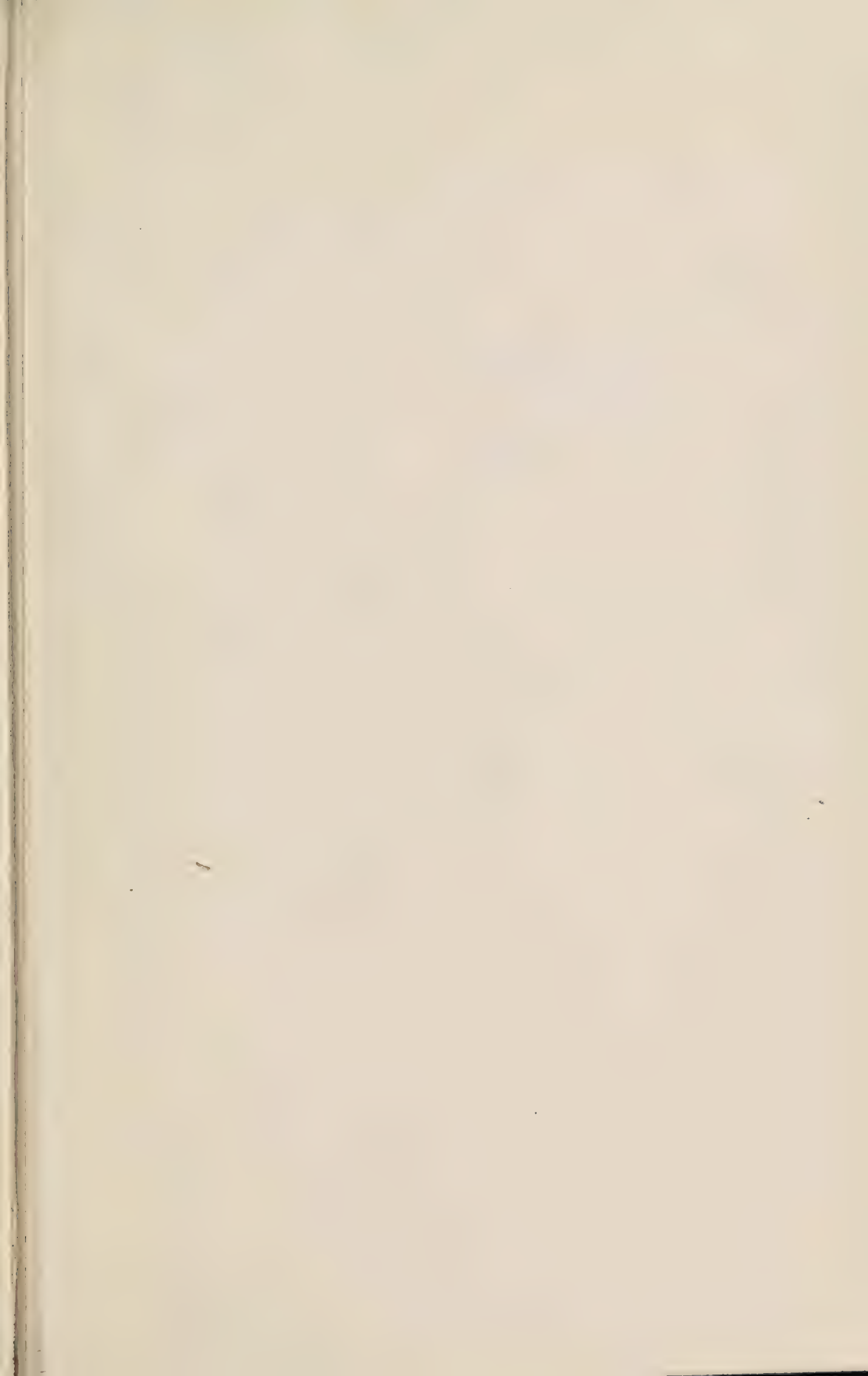
Population (zoology)

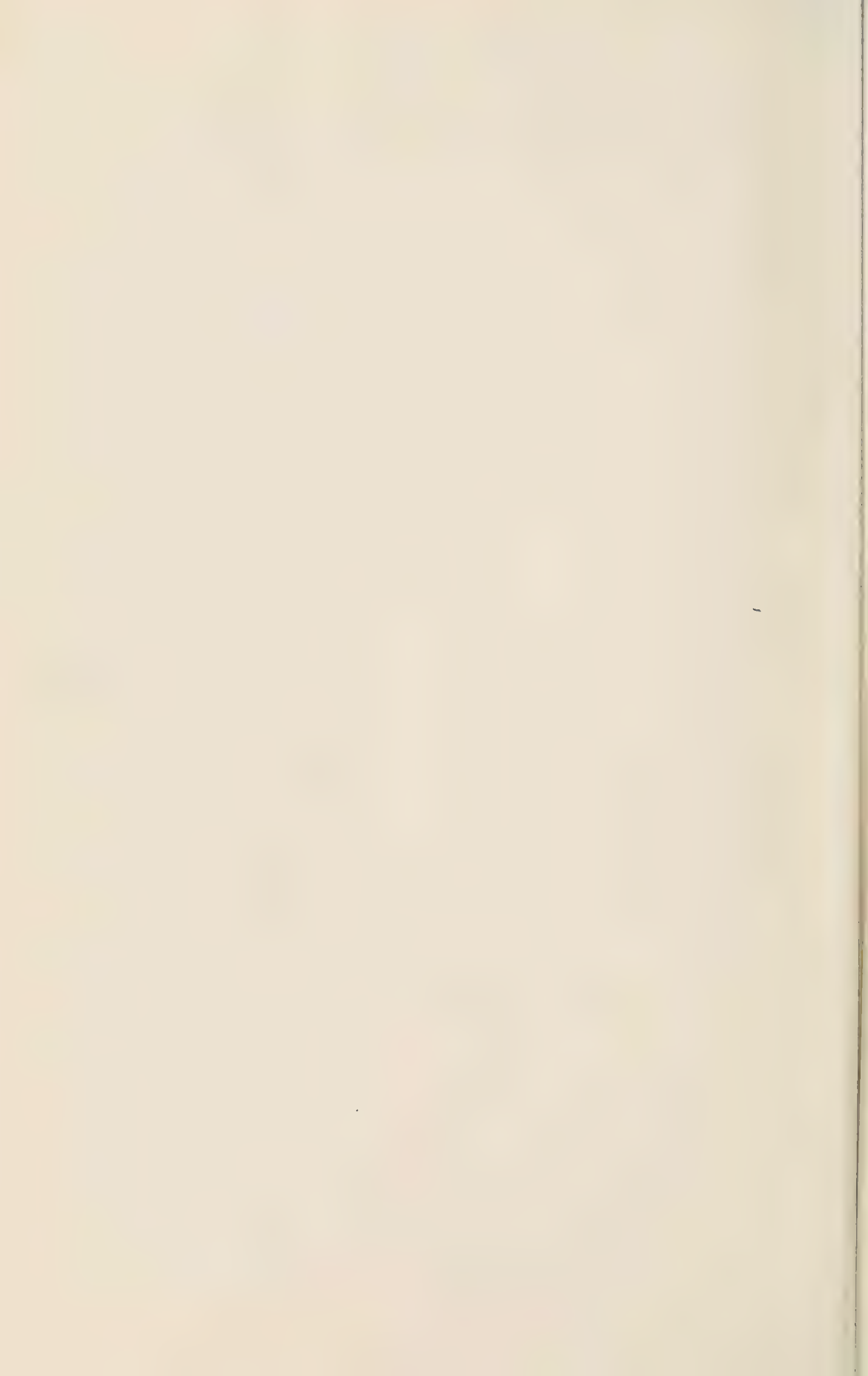
**ZWITTERIONS**

Evidence against an exclusive zwitterion intermediate in ozonide formation. R. W. Murray and others. bibliog Am Chem Soc J 88:3143-4 Jl 5 '66

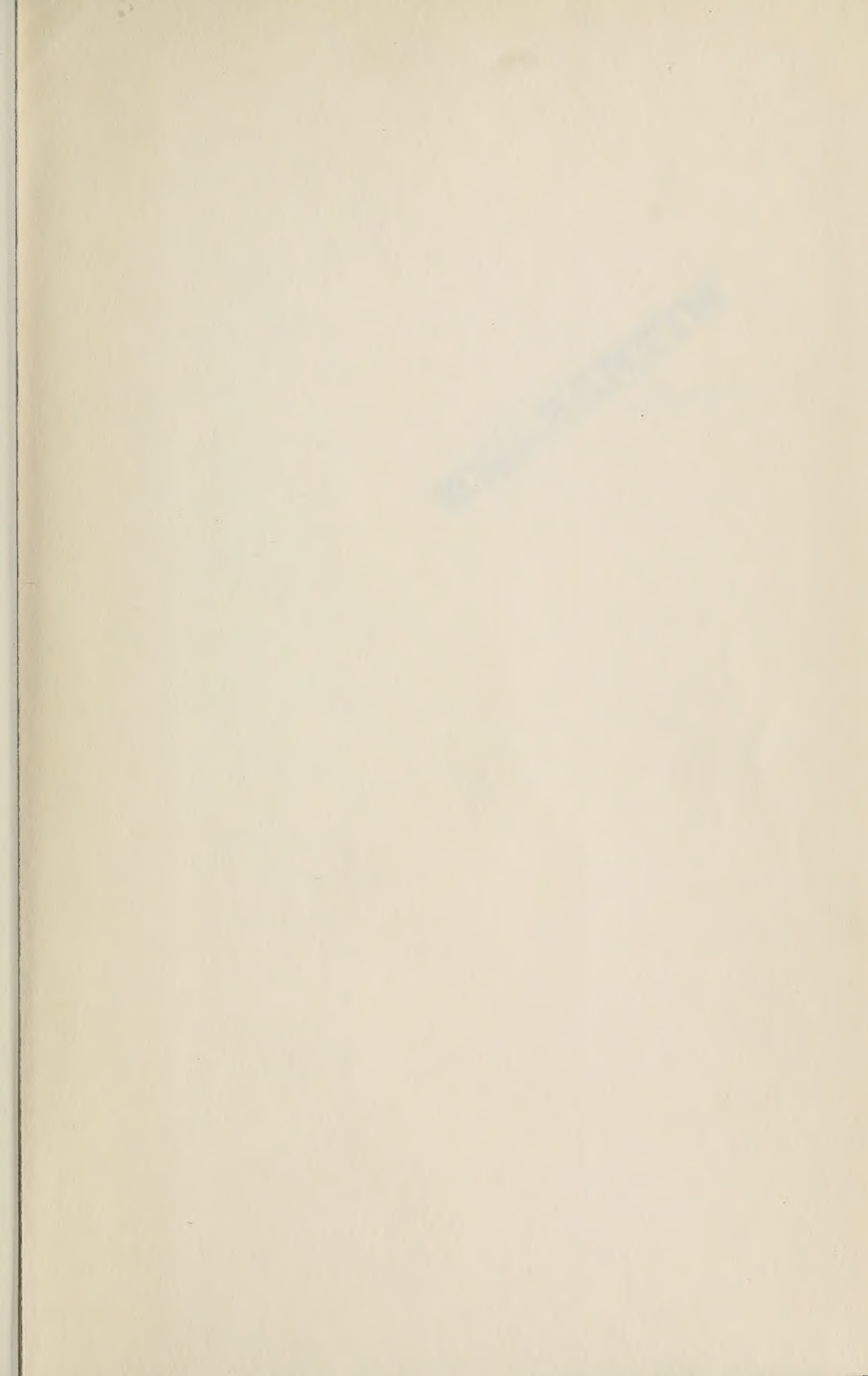












WITHDRAWN





